Market Power and Political Connections *

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Abstract

We quantify the importance of political connections with congressional committee members on firm market power in the United States. For identification, we exploit a congressional procedure (committee exile) leading to variations in a committee member's political influence. We find that on average 10% more political connections with important committee members increase firm-level markups by 0.58 percentage point, or profitability by 0.45 percentage point among U.S. public firms. The effect can be explained by lower competition for government procurement contracts. We show that the increase in political connections can explain 15-20% of the increase in average markups over 1993-2014. To disentangle the effects of the increase in political connections on the increasing markups of large firms, we propose and estimate a general equilibrium model with oligopolistic output markets and two final goods: public and private final goods. Overall, our paper reveals the increase in corporate political connections serve as a key mechanism in the rise of market power of large firms in the United States.

Keywords: Political Connections; Market Power; Procurement
JEL classification: L22; D72; D4; L1; H57

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1 Introduction

In the United States, the well-established channels through which interest groups try to influence legislators entitle political connections as the crux of economics and political science research. As the major players in the economy, firms have been actively building up political connections. Better access to politicians enables firms to obtain more information about potential policies and government resources, to express their concerns about policies. Therefore, these firms gain advantageous positions in competition through more access to government procurement contracts and subsidies and through influencing policy-making procedures. Sizes and resources of larger firms, in turn, allow them to have more access to politicians and influence politics compare to their smaller competitors. Given the endogeneity between market power and political connections driven by reverse causality, however, it is challenging to clearly distinguish and quantify how political connections affect market power.

In this paper, we measure corporate political connections by observing corporate political action committee (PAC) campaign contributions to U.S. congressional committee members, and quantify its effect on firm market power. We first tackle the endogeneity with a special congressional procedure in committee assignment process, and then propose and estimate a quantitative model to disentangle the effects of the increase in political connections on the increasing average markups.

As legislative sub-organizations in the United States Congress, congressional committees handle specific but important duties in the Congress. For example, among the most influential committees, Appropriations Committee passes appropriation bills and regulate expenditures of money by the government. Budget Committee provides legislative oversights of the federal budget process and reviews all bills and resolutions on the budget. Thus, congressional committee members are particularly powerful on legislative decisions, government awards and budgetary plans. From a firm's perspective, corporate political connections with committee members are intangible and can be, broadly speaking, detected via a number of alternative ways including campaign contributions (Bertrand et al., 2014, 2020), employment of politicians (Faccio, 2006; Akcigit et al., 2022), shared education networks with executives (Cohen et al., 2008), past political experiences of board members (Goldman et al., 2013), or lobbying activities (Richter et al., 2009). Observing corporate political connections from campaign contributions to committee members is particularly convenient due to visibility of detailed data[1] and feasibility of identification with exogenous variations. We measure political connection between a firm and a committee member as one if the firm makes campaign contributions to the member in a

[1] At the same time, board members and executive can have past experiences in government or military, same membership in a golf club with government officials, or promise them lucrative jobs on boards after exiting politics. Although all of these can be treated as political connections, we focus on the importance of campaign contributions due to its transparency and availability.

Congress, and zero otherwise.[2]

Our empirical analysis starts with assembling a dataset[3] covering US listed firms by merging: (i) universe records of campaign contributions to congressional committee members from firm PACs[4]; (ii) lobbying and independent expenditures associated with firm PACs; (iii) government procurement contracts and financial subsidies awarded; (iv) federal registry of congressional committee members and their assignments; and (v) firm financial statements and executive compensations.

To address the endogeneity concern between politics and market power, we propose an identification strategy leveraging involuntary removal of US congressional committee members (committee exile), which is first introduced and exploited in (Grimmer and Powell, 2013, 2016) as a source of variations of a member's influence over the policy-making process. Committee exile happens after a defeat in a congressional election, when the old majority party (Democratic) unevenly loses seats on every committee because committee ratios are adjusted to reflect the new majority's (Republic) seat advantage[5]. In fact, the probability of committee exile depends on various moving parts including the size of lost seats as well as the number of returning politicians, making it hard for firms to predict it. This event helps us to isolate the exogenous part of the variations in political connections that are orthogonal to a set of firm characteristics. Figure 1 illustrates the committee assignment process. When a committee member is exiled, she will be removed from an important committee and usually receives a less important committee assignment. Our empirical strategy begins with restricting our sample to junior politicians (seniority less than or equal to 6 years) with similar probability of being exiled. Among comparable politicians, we verify the two identifying assumptions of this congressional procedure. First, consistent with Grimmer and Powell (2013), there is no difference in funds received between exiled and non-exiled members, indicating that committee exile is not driven by campaign contributions received. Second, firms are indifferent in sizes when donating to exiled and non-exiled members. The two verification exercises confirm that the committee exile is as good as unexpected to firms.

[2]We abstract from measuring political connections with the amount of campaign contributions, which are typically limited to a few thousand dollars to each candidate within each election cycle. In reality, however, real costs of political connections are possibly far beyond campaign contributions. First, political connection may inflate political risks and reduce firms incentives to invest or innovate, as discussed in Grotteria (2023). Second, firms have not only disclosed political expenditures including lobbying and independent expenditures, which are a thousand times higher compared to campaign contributions, but also invisible costs can also exist such as expenses related to traveling, golf club, etc.

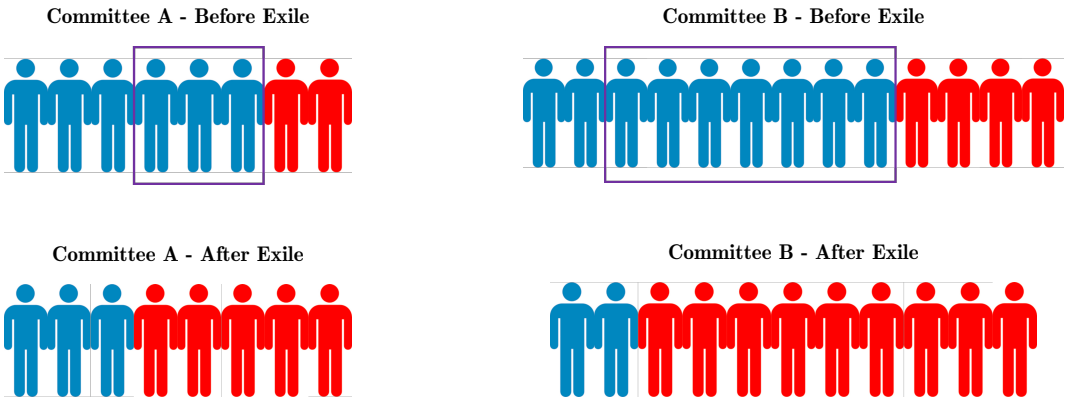
[3]Although we are among the first to compile such a comprehensive dataset, the main data sources have been validated and explored extensively in previous papers. For example, campaign contributions in Cooper et al. (2010), lobbying expenditures in Bertrand et al. (2014, 2020); Grotteria (2023), charitable donations in Bertrand et al. (2020, 2021), independent political expenditures in Petrova et al. (2019), government procurement contracts in Brogaard et al. (2020); Cox et al. (2020); Grotteria (2023).

[4]Our data also consists of CEO individual campaign contributions to committee members. However, throughout the paper our analysis focuses on firm political connections because firms are more influential than individual CEOs. Section 3 presents detailed comparison between firm and CEO campaign contributions.

[5]See Grimmer and Powell (2013, 2016) or more details on incidence and characteristics of committee exile, as well as its electoral, political and pecuniary consequences.

Figure 1: Committee Exile: A Graphical Illustration

This figure illustrates the committee exile process and outcomes when Republicans (red) win the congressional election and exile (Democrats). Democrats within purple squares are force to leave due to the uneven changes in committee sizes and ratios.



We aggregate our data at firm-Congress (every two years as an election cycle) level to start the empirical analysis. Our measure of corporate political connections is total number of committee members with campaign contributions from the corporate PAC. With committee exile, we construct a measure of loss of important political connections by counting all politicians donated by the firm but exiled. Thus, a loss ratio of important political connections is defined as loss of important political connections divided by total number of political connections. Our empirical strategy starts with comparing outcomes of firms with different loss ratios of political connections resulted from committee exile.

Equipped with the identification strategy, we empirically estimate the effect of loss of important political connections on firm market power. We measure firm-level markups, following De Loecker et al. (2020) through a cost-based method and profitability by profits over total sales. Our empirical analysis starts with zooming into the 111th Congress, when Democratic Party lost control of House of Representatives and a lot of seats in the Congress. We employ an event study approach to compare firms not losing and losing a high share of political connections, before and after 111th Congress. We find that compared to those losing political connections, firms not losing political connections have higher markups after the committee exile. The effects are driven by higher sales and lower costs.

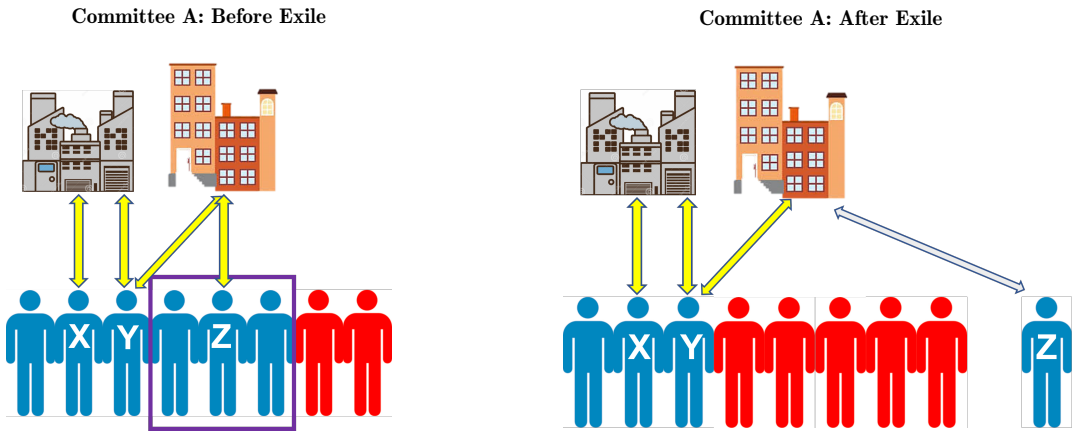
Next, we extend the analysis to the whole sample, with the loss share of political connections as a continuous treatment to firms. On average, we find that 10% more political connections with important committee members leads to 0.58% higher firm-level markups and 0.45% higher profitability. Based on baseline results, we provide more empirical evidence on the heterogeneous effects of loss of political connections. First, when we compare firms donating to more Democrats than Republicans, we find that the effects are significantly stronger, implying that firms with "Democratic partisanship" lose more when they face committee exile. Second, our estimated effects are smaller when we restrict committee members within those who have ever been exiled. In other words, exiled committee members on average have lower political

power. Third, by looking at different industries we find that the effect is strongest for finance industry, followed by manufacturing and service industries. Fourth, we show that conditional on having similar firm characteristics, firms with more important political connections experience a larger effect from each unit of political connections. At the same time, political connections are only effective when the number of connected politicians is large enough. We also perform a series of robustness check to confirm our main findings, including restrict firms to those ever losing political connections from committee exile, controlling for connection with party leaders or remove the potentially predictable part of committee exile.

On the basis of main results, we unfold potential channels via which political connections increase firm market shares. With an event study design of 111th Congress, we find that compared to firms experiencing committee exile, firms with more successfully connected politicians on average are awarded more government procurement contracts in values, as well as more financial subsidies from government. We propose that government procurement contracts could be the main channel explaining the main effects, due to its much larger scale compared to subsidies.

Figure 2: Identification Strategy

This figure illustrates our identification strategy. Politician Z is exiled after the congressional defeat but politician X and Y are not. The gray firm connected to politician X and Y does not lose political connections with the important committee A. However, since politician Z is not in the committee A any more, the yellow firm connected to politician Z loses one political connection, or 50% of all political connections with committee A.



Apart from the main empirical evidence, we are agnostic on how do political connections affect firm market power. Our explanations focus on better access to politicians. Having access to politicians help the firms to obtain better information about relevant policies and to reveal firm types (productivity) to the politicians.However, the effects of political connections on welfare are ambiguous. On the one hand, it increases efficiency by reallocating productions to more productive firms. On the other hand, these firms may not pass on their efficiency gains to the customers. Therefore, a key contribution of this paper is to assess the welfare effects of the increase in political connections with a quantitative framework.

The second part of the paper develops and estimates a general equilibrium model in the

spirit of De Loecker, Eeckhout, and Mongey (2021). Our main empirical evidence shows that the increase in firm political connections accounts for 15-20% of the rise of market power among firms with campaign contributions during 1993-2014. Within a quantitative framework, we are able to disentangle different channels contributing to the main effects. There are two key features in the model. First, there are oligopolistic output markets with heterogeneous firms facing competitive input markets. Second, apart from a private final good consumed by the households, there is a public final good that is produced by a selected set of firms and purchased by the government.

In the model, we distinguish two structural channels through which political connections affect market power. The first channel is lower competition in the public good markets, leading to higher markups in the public good markets. We consider the cost of building political connections as the cost of entry into the public good markets. It can be seen as the cost of obtaining information or the cost of revealing firm productivity. After paying the cost, firms are able to enter the public good markets and compete for the government resources, such as procurement contracts, in the similar way as they do in the private good markets. As the entry cost into the private good markets, the increase in the cost of political connections benefits the consumers through lower cost of production and lower prices. However, firms are able to extract more rents by increasing their market shares. An increase in the entry cost to build up political connections inhibits participation, and hence reduces the number of competitors within each submarket. As a consequence, firms can set higher markups and obtain higher returns from political connections. In reality, changes in entry cost to participate in political connections come from legislations related to campaign contributions. In this paper, we particularly focus on the increase in the cap of campaign contributions proposed by the Bipartisan Campaign Reform Act of 2002[6] or Citizens United v. FEC[7], which is FEC's approval of independent expenditure committees to accept unlimited contributions from corporation., which allows larger firms to make more campaign contributions and crowds out smaller firms.

The second channel is through the relative importance of the high markups in public good markets, via changes to relative of values of government procurement contracts to firm sales. Without detailed data on the prices and quantities of production from U.S. government procurement, it is hard for us to separately estimate firm markups in the public good markets and in the private good markets. Under the assumption that each firm adopts the same (linear) technology to produce both types of goods, we can compute firm-level markups as the average of the public and private markups weighted by the amount of sales in each market. On one hand, an increase in the total government resources accessed by firms leads to an increase in the weight of the higher markups in the public good markets, and hence a rise in overall markups. On the other hand, an relative increase in the total government resources compared to the entry cost make it cheaper for firms to enter the public good markets and therefore increase

[6]See https://www.fec.gov/resources/record/2002/dec02.pdf#page=8

[7]See https://www.fec.gov/legal-resources/court-cases/citizens-united-v-fec/#:~:text=On%20January%2021%2C%202010%2C%20the,the%20part%20of%20McConnell%20v.

competition.

Through the decomposition, we find that increase in the cost of political connections account for almost all of the rise in markups explained by the rise of political connections (15%) while the increase in the ratio of procurement contract value to firm sales leads to a minor decrease in the average markups, suggesting that the per unit return to political connections may increase over time.

The rest of the paper is organized as follows. Next section reviews the related literature. Section 3 describes data sources, measures and summary statistics. Section 4 introduces institutional background and assumptions. Section 5 presents the identification strategy and empirical evidence. Section 7 provides insights of the quantitative model and implications. Section 8 concludes.

2 Literature Review

The Role of Politics in Market Power and Competition. Our paper, first and foremost, provides a direct contribution to the trending discussion on the interplay between politics, competition and firm market power. Broadly speaking, political connections have important roles in shaping competition (Faccio and Zingales, 2021) and antitrust regulations (Mehta et al., 2020). Recent papers also have started to study they interplay between politics and market power, such as the circularity (Callander et al., 2022) within "vicious circle" between politics and market power (Zingales, 2017; Eeckhout, 2021). In particular, Cowgill et al. (2022) examine the link between lobbying and concentration in industries, which directly affects market power. Our paper contributes to this literature by documenting the effects of firm political connections on market power with an identification strategy.

Market Power。 Our paper is also related to the strand of literature that studies the rise of market power (De Loecker, Eeckhout, and Unger, 2020; De Loecker, Eeckhout, and Mongey, 2021). De Loecker, Eeckhout, and Unger (2020) document the rise of market power with a cost-based method to measure firm-level markups. Then De Loecker, Eeckhout, and Mongey (2021) explore both the cause and consequences of the rise in market power with a quantitative framework. Our paper contributes to this literature in two ways. First, we estimate the contribution of the increase in political connections to the rise of market power of large firms. Second, building on the model developed by Atkeson and Burstein (2008), De Loecker, Eeckhout, and Mongey (2021) and García-Santana et al. (2022), we disentangle the effects of political connections on market power.

Corporate Political Influence. Our paper also provides a direct contribution to the literature on corporate strategies in seeking political influence, which has been prevalent among research in economics, finance and strategic management over recent years. Corporate political connections are not only found to have widespread existence (Faccio, 2006), but also associated with higher stock returns (Goldman et al., 2008; Cooper et al., 2010), more government contracts (Goldman et al., 2013; Aobdia et al., 2022), firm survival (Zheng et al., 2015), and even

externalities such as higher default rates on bank loans (Khwaja and Mian, 2005) or risk exposure (Kostovetsky, 2015). At the same time, non-market strategies are shown to be intercorrelated in recent years. For example, Bertrand et al. (2020) and Perez-Truglia et al. (2021) find that charitable donations can be an alternative tool to seek political influence. A noticeable paper is Brogaard et al. (2020), who use unexpected politician deaths and resignations as exogenous variations. Their estimates show that politically connected firms initially bid low and successfully renegotiate contract amounts, deadlines, and incentives. We contribute to this series of literature by proposing an identification strategy to study firm-level outcomes and estimate the effect of political connections on firm market power.

Government Allocation of Resources. Our paper also contributes to the literature studying the role of government in economic performance through allocation of resources across firms. In particular, our model design of a public sector demanding goods from private firms is motivated by García-Santana et al. (2022), who examine how the procedure of awarding public procurement contracts to private firms may affect the macroeconomy with Spanish administrative data. In addition, Cox et al. (2020) reveals the heterogenerous nature of the U.S. federal public procurement contracts, and how the concentration of contracts in sectors where prices are more sticky affects the short run fiscal transmission mechanism. Recent papers have been noticeably examining the role of non-market strategies in government allocation of resources. Firms lobby politicians to increase their share of government procurement contracts (Grotteria, 2023). Political connections have been shown to affect renegotiation value of procurement contracts (Brogaard et al., 2020) and government financial subsidies (Aobdia et al., 2022). Companies with high corporate social responsibility also receive more government contracts (Flammer, 2018). By providing an identification strategy at firm-level, our paper comprehensively examines the role of political connections in receiving government resources, which have important implications on firm market shares and market powers.

Congressional Committee Assignments. As an important congressional procedure in the United States politics, committee assignments have attracted extensive attention from researchers in economics and business. Our paper is also related to the emerging literature focusing on this specific congressional procedure. Grimmer and Powell (2013) exploits a novel identification strategy - committee exile, which is the involuntary removal of committee members after a party loses a sizable number of seats and find it has only limited electoral consequences. They find that leaving and returning politicians have similar characteristics apart from seniority. Their companion paper (Grimmer and Powell, 2016) extends this identification strategy to show that business interests see short-term access to influential legislators. Rather than politician level variations and outcomes, Bertrand et al. (2014) finds that lobbyists follow politicians they were initially connected to when those politicians switch to new committee assignments. Bertrand et al. (2020) generates a time-varying, pair-specific measure linking company interests to specific legislators, which is shown to be predictive of corporate donations to charities in the legislator's district. Our paper leverages committee exile from Grimmer and Powell (2013, 2016) as the identification strategy, and estimate the effect of political connections

on firm market power.

3 Data

3.1 Committee Assignments and Exile

Committee exile, as first studied in Grimmer and Powell (2013, 2016), happens when there is a defeat in congressional election. Following the election and before any assignments can be made, two party leaders must negotiate the committee sizes and party ratios for each committee. In addition to losing its majority status, a party loses at least a proportional number of seats on every committee as committee ratios are adjusted to reflect the new majority's seat advantage. This causes some legislators to lose their committee seats, or to be exiled, because there are an insufficient number of slots to accommodate the returning members. In deciding whom to exile, both parties employ a seniority system removing the least senior (fewest terms on the committee) committee members.

We obtain the list of members of the US Congress, their committee assignments and seniority within each committee from Charles Stewart's Congressional Data Page[8] during 1993-2014 (103rd - 113th Congress). The committee exile, as in Grimmer and Powell (2013), includes 152 cases of involuntary leaves of congressional committee members during 103rd - 113th Congress. Exiled members are matched with their assignments and seniority by first and last names, as well as congressional districts.

3.2 Other Data Sources

Money in Politics. In the United States, as in many democracies, the well-established channels through which interest groups seek influence on rules and legislations provides researchers with visibility of campaign finance, lobbying and independent expenditures[9] to trace money in US politics. As a nonprofit organization based in Washington, D.C, Opensecrets tracks money in politics and its effect on elections and policy[10], and keeps the universe records of campaign contributions from individuals and PACs, lobbying expenditures and independent expenditures in details. We collect detailed information of all individual and PAC campaign contribution records[11], lobbying expenditures and independent expenditures from OpenSecrets

[8] Stewart III and Woon (2017)

[9] An independent expenditure is an expenditure for a communication that expressly advocates the election or defeat of a clearly identified candidate and which is not made in coordination with any candidate or their campaign or political party.

[10] Opensecrets was created from a merger of the Center for Responsive Politics (CRP) and the National Institute on Money in Politics (NIMP) in 2021.

[11] In the United States, corporations are not allowed to directly donate to politicians. Instead, they create PACs to make campaign contributions.

during 1993-2014 (103rd - 113th Congress)[12], and restrict recipients of campaign contributions only within individual Congress committee members from either Democrats or Republicans.

Government Procurement and Subsidies. As a practice, the US government enters into contracts with firms to purchase goods and services. The Federal Procurement Data System (FPDS) tracks procurement contracts of the US federal government, which provides comprehensively detailed information on almost all federal contracts for 65 branches, departments and agencies of the federal government since 2001. We retrieve detailed contractual information from the USAspending.gov webpage[13], which reports detailed information on initial values, awarding date and renegotiation values on any contract with a transaction value of at least $3,000. Apart from government contracts, financial assistance accounts for another significant type of transferring taxpayer money to corporations. We rely on the Good Jobs First Subsidy Tracker[14], a national non-profit organization promoting corporate and government accountability, to obtain the information on subsidies received by corporations at federal, state and local levels.

3.3 Linking different datasets

Firm-level variables come from Compustat/CRSP merged. Given the complex historical data and absence of common identifiers among the datasets we collect, we overcome the challenging data-linking process by fuzzy matching and hand-checking. Second, to merge PAC contributions, lobbying expenditures and independent expenditures with listed firms, we perform a fuzzy matching process between Compustat firm names and organizations sponsoring the PACs in Opensecrets. Thereafter, we also handcheck fuzzy-matched organizations to make sure they denote the same firm essentially. Finally, in a similar manner, firm names are fuzzy matched and hand checked with government contracts and subsidies recipients or their parents. We employ a threshold of Levinstein distance ≥ 0.8 in all the fuzzy matching processes, to avoid losing possibly correct pairs. All monetary variables are in real values, deflated by Consumer Price Index ($2015 = 100$)[15]

3.4 Data Facts

Summary Statistics. Our sample spans 1993-2014 (103rd-113th Congress) and consists of 5,986 observations conditional on valid contributions to committee members, and 23,373 observations unconditionally. Table 7 reports summary statistics of the data unconditional or conditional valid contributions.

Measures of Political Connections. Following Bertrand et al. (2020), we measure political

[12]The full disclosure of independent expenditures start from 107th Congress (2001), from when we have the independent expenditures data.

[13]https://www.usaspending.gov/

[14]https://subsidytracker.goodjobsfirst.org/

[15]https://fred.stlouisfed.org/series/CPIAUCSL

connections as a dummy variable equal to one if a firm is connected to a committee member via campaign contributions, and zero otherwise. In this paper we abstract from using the amount of campaign contributions to measure the level or magnitude of political connections, because firms can have multiple pecuniary connections with politicians, including lobbying and independent expenditures. As shown in Figure 15, firms with more connections with committee members are on average more likely to have higher lobbying and independent expenditures.

Measures of Market Power. Following De Loecker et al. (2020), from the first order condition of firms' cost minimization problem with respect to variable input V, we obtain a simple expression for the markup:

$$\mu_{it} = \theta_{it}^{V} \frac{P_{it}Q_{it}}{P_{it}V_{it}}.$$

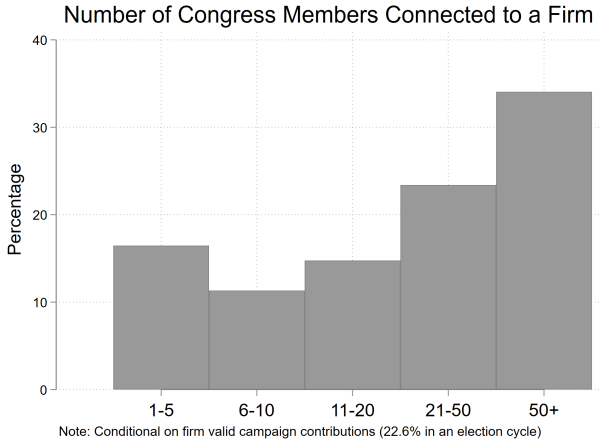
As stated in De Loecker et al. (2020), this expression is derived without specifying a particular demand system. To measure the markup, all we need is the reverse of the revenue share of the variable input $\frac{P_{it}Q_{it}}{P_{it}V_{it}}$ and the output elasticity of the variable input θ_{it}^{V}. We will measure the variable input using cost of goods sold (COGS) and all non-production expenses (SG&A).

Patterns of Connections with Committee Members. Figure 3 shows patterns of firm political connections with committee members via campaign contributions. On the left panel, we plot the distribution of number of politicians connected to each firm, conditional on valid contributions during each Congress. More than 50% of participating firms donate to more then 20 members in each Congress. On the right panel, we plot the distribution of ratio of Democrats contributed, among all committee members. Most of participating firms donate to both Democratic and Republican Party. We discuss potential issues of this measure in Section 7.

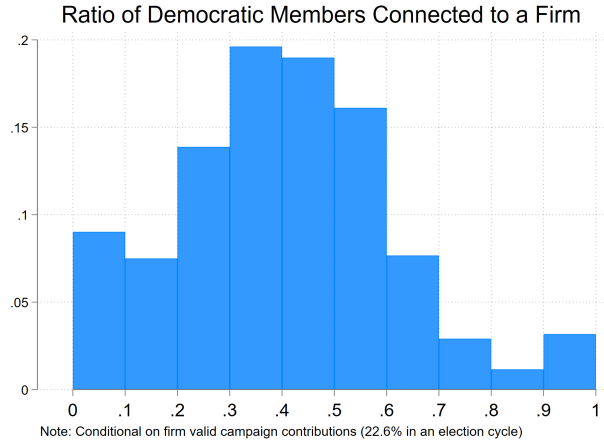
Figure 3: How are Firms Connected to Committee Members

This figure shows how firms are connected to congressional committee members in each Congress. Panel A plots the distribution of number of connected members. Panel B plots the ratio of Democrats connected among all members.

Panel A: Distribution of Connected Members



Panel B: Ratio of Democrats



4 Committee Exile and Loss of Political Connections

4.1 Institutional Design: Committee Exile

A congressional committee is a legislative sub-organization in the United States Congress that handles a specific duty, rather than the general duties of Congress. Given that committee members develop specialized knowledge of the matters under their jurisdiction, there are indeed preferential committee assignments. For example, in the House of Representatives, Ways & Means, Energy & Commerce and Appropriations Committees are recognized as more powerful[16] compared to Rules, Veteran's Affairs and Small Business Committees, due to the essence of the issues oversighted by the committee. Equivalently, politicians in more powerful committees have more influence among interest groups compared to those in less powerful committees.

To seek political influence strategically, firms choose whether to engage in campaign contributions and whom to connect in congressional committees. The decisions in campaign contributions, therefore, are correlated with many firm-level, as well as politician observable and unobservable characteristics which may affect firm outcomes and strategies. To address this concern, we exploit exile of congressional committee members, as introduced in Grimmer and Powell (2013, 2016), as a source of quasi-exogenous variation in a firm's political connections. After a defeat in a congressional election, committee exile happens when there are not sufficient number of slots to accommodate the returning members who win the election in their congressional districts. The reason is that the outgoing majority party is forced to relinquish power by loss of valued committee assignments for returning incumbents, and electoral losses are spread unevenly across committees[17]. In Figure 4, we plot all the exile cases over time in our sample period (1993-2014) omitting the Congresses without exile. As shown in Grimmer and Powell (2013). the bulk of exile cases after a major wave election changing control of the chamber.

However, the decisions of both parties on whom to exile depends on the seniority rule to remove the least senior committee members (fewest terms served on the committee). Consequently, firms can strategically direct their funds to very senior politicians who will seldomly be exiled to avoid loss of political connections, so that committee exile is not exogenous to firms. Therefore, to leverage committee exile as our identification strategy, we keep only marginal politicians[18] who are subject to exiles in case a congressional election defeat happens.

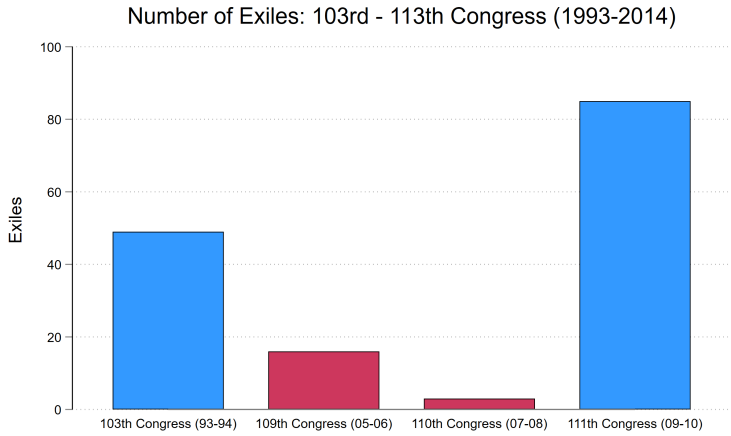
[16] According to OpenSecrets, Ways & Means, Energy & Commerce and Appropriations Committees top the list of number of revolving door people profiled. See https://www.opensecrets.org/revolving/top.php?display=C&chamb=H

[17] For any new congress, the committee assignment process begins with the committee assignments and party ratios of the previous congress. Following the election, although new and returning members submit committee or transfer requests, the majority and minority party leaders must negotiate the committee sizes and party ratios for each committee, to reflect the majority status. Once a member has received an assignment on a committee, it is assumed that she or he will have the option to continue to serving on it.

[18] In all of our empirical analysis we keep politicians with seniority less than or equal to 4 terms (8 years), but the results are robust to other thresholds.

Figure 4: Committee Exile: Number of Cases over 1993-2014

This figure plots the number of exile cases over time in our sample period (1993-2014) omitting the Congresses without exile. Red bars denote exiled Republicans and blue bard denote exiled Democrats.



4.2 Identifying Assumptions

Since our identification strategy relies on the exogeneity of exile to firms, we verify two identifying assumptions. First, exiled and non-exiled politicians should be indifferent in their political abilities measured by observed characteristics, for example, funds received during the Congress before congressional election defeat happens. To verify this, we aggregate all firm PAC campaign contributions at politician-Congress level and regress funds received on a dummy of politician ever exiled interacted with an event dummy around exile happens. We compare funds received by exiled (leaving) and non-exiled (remaining), before and after the committee exile happens. Second, because larger firms may employ more resources to predict outcomes in politics, we verify that larger firms do not have a higher or lower chance of experiencing exiled politicians.

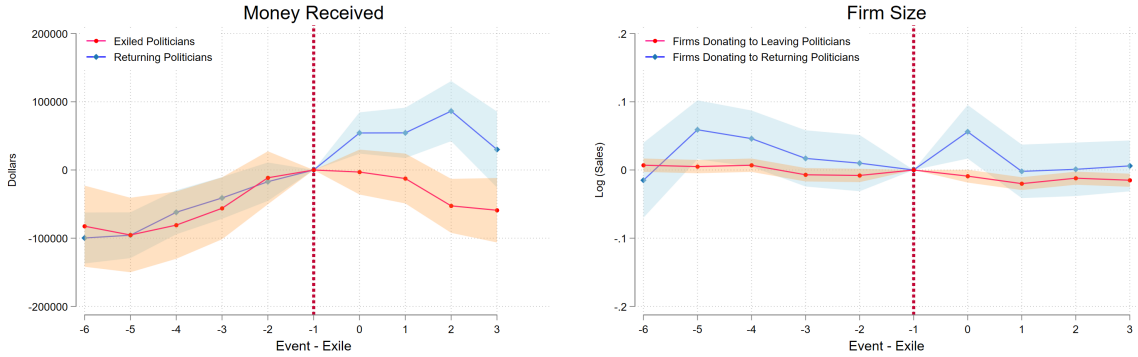
On the left panel of Figure 5, we plot money received by exiled (leaving) and non-exiled (remaining) politicians, before and after the exile happens. Consistent with Grimmer and Powell (2013), we find that leaving politicians receive significantly less money than remaining politicians after they are exiled, but not before. This finding implies that committee exile is not determined by the money they receive before exile happens. In other words, campaign contributions cannot determine commitee exile. On the right panel of Figure 5, we plot estimated coefficients and depict 95% confidence intervals of sizes, measure by log (sales), of firms donating to leaving and remaining politicians before and after the committee exile. Larger firms are not able to predict whether a politician will be exiled in the next Congress.

4.3 Loss of Political Connections

To take advantage of committee exile at firm level, we create a variable measuring loss of political connections resulted from committee exile. First, we define a politician-level dummy

Figure 5: Identifying Assumptions

This figure verifies two identifying assumptions of our identification strategy. In the left panel we plot estimated coefficients and depict 95% confidence intervals of money received by leaving and remaining politicians before and after the committee exile. In the right panel we plot estimated coefficients and depict 95% confidence intervals of sizes, measure by log (sales), of firms donating to leaving and remaining politicians before and after the committee exile.



variable indicating committee exile of the politician:

$$\text{Exile}_{i,p,t} = \begin{cases} 1 & \text{if pol } p \text{ donated by firm } i \text{ is exiled at the end of period } t \\ 0 & \text{if pol } p \text{ donated by firm } i \text{ is not exiled at the end of period } t \end{cases}$$

Then we aggregate firm's total loss of political connections due to committee exile:

$$\text{Loss}_{i,t} = \sum_{p} \text{Exile}_{i,p,t}.$$

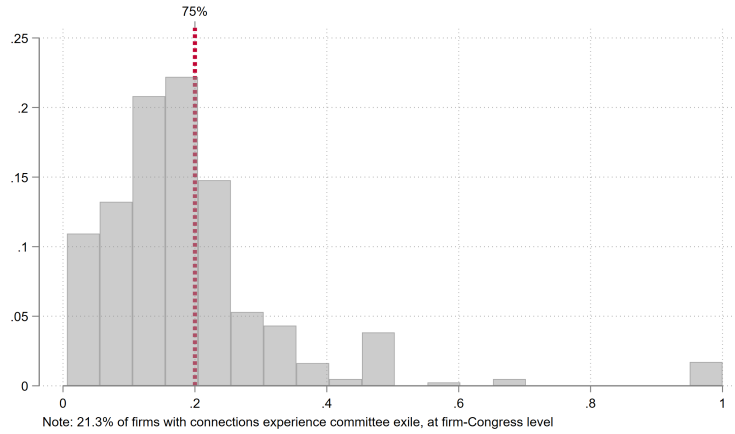
Thus, firm-level share of loss in political connections are measured as:

$$\text{LossShare}_{i,t} = \frac{\text{Loss}_{i,t}}{\text{Total Number of Important Political Connections}_{i,t}}. \tag{1}$$

Figure 6 plots distribution of loss share constructed from committee exiles. Out of 5,741 firm-Congress observations with campaign contributions to committee members, a nontrivial number of 1,225 (21.3%) observations have a positive loss share. Less than 75% firms lose fewer than 20% of their political connections resulted from committee exiles. Firms with a higher loss share are usually connected to few committee members. It is noticeable that for each firm-Congress pair, it is possible to construct several measure of the loss share within different groups of politicians. As a first measure we simply include all junior committee members in the set of baseline results. Thereafter, we restrict the sample of committee members with filters such as those ever exiled or within important Congressional committees.

Figure 6: Distribution of Loss Share

This figure plots distribution of loss share constructed from committee exiles, based on positive loss shares. Conditional on connections with committee members via campaign contributions, 21.3% (1,225 out of 5,741 firm-Congress observations) have experienced committee exile.



5 Evidence Based on Committee Exile

5.1 Event Study: A Major Loss of Democratic Party in the 112th Congress

Our empirical analysis starts by focusing on committee exile during 112th Congress (2011-2012), in which Democratic party unexpectedly lost many seats in the Congress. In the 2010 midterm elections, the Republican Party won the majority in the House of Representatives. While the Democrats kept their Senate majority, it was reduced from the previous Congress. To create discrete treatment and control groups, we divide firms into groups based on their loss share. Conditional on valid campaign contributions in the 111th Congress (2009-2010), firms are divided into groups of no loss, lower loss share ($\in (0, 0.2]$) or higher loss share ($\in (0.2, 1]$). In an event-study approach, we compare outcomes related to market power of different groups before and after the 112th Congress. We employ the following empirical specification:

$$\begin{aligned} Y_{i,t} =& \alpha + \sum_{\substack{\tau \neq 0 \\ -3 \leq \tau \leq 2}} \sum_{i \in \{1,2\}} \beta_{i\tau} \times \text{Group}_i \times \mathbf{1}_{t=\tau} + \sum_{i \in \{1,2\}} \beta_{0\tau} \times \text{Group}_i + \\ & \boldsymbol{\theta X_{i,t-1}} + \gamma_t + \epsilon_{i,t}, \end{aligned} \tag{2}$$

where $Y_{i,t}$ are measures of firm i market power at time t, including markups (sales/total costs $\times$ industry level scale elasticity) and profitability (1 - total costs/sales). Group_i denotes firm groups by loss share as we defined, in which $i \in \{0, 1, 2\}$. The sample is restricted within firms with valid campaign contributions in 111th Congress. $X_{i,t-1}$ contains a series of lagged firm characteristics including log of total sales, log of cost of goods sold and log of number of political connections. Time and industry fixed effects are included and standard errors are clustered at firm level. Our event study analysis is restricted within three Congresses (6 years) before and two Congresses (4 years) after the committee exile at the beginning of 112th Congress.

In Figure 7, we plot estimated coefficients and depicts 95% confidence intervals of the group with no loss and losing more than 20% of political connections. We compare outcomes of firms in the two groups before and after the committee exile. As shown in Figure 7(a), two groups of firms have parallel trends in markups before committee exile. After committee exile, however, firms not losing political connections on average experience a significantly higher increase in markups compared to those losing a high share of political connections. We confirm the findings by using an alternative measure of market power, profitability, in Figure 7(b). The effects is strong for one Congress (two years) but vanishes in two Congresses (four years), implying that firms seek short-term access to committee members via campaign contributions.

It is natural to ask whether the positive effects on markups and profitability are driven by increase in sales or decrease in costs. To address this question, we plot the event study results for log of total sales and total costs, in Figure 7(c) and Figure 7(d) respectively. Compared to firms losing a high share of political connections, firms not losing political connections have a significantly higher sales and a significantly lower total costs after committee exile. We conjecture that the increase in sales could be driven by higher values of government procurement contracts, and decrease in total costs by more government subsidies and effective tax rates. We provide more suggestive evidence in Section 6.

5.2 All Congresses

After employing an event study approach to study the effect of committee exile in one Congress, we now zoom out our empirical analysis and pooling all Congresses during 103-113th Congresses (1993-2014). We compare market power related outcomes of firms losing a higher and lower ratio of political connections. In other words, we use a continuous treatment of loss share and estimate its average effect on firm market power. In particular, the dependent variables of our interest include firm total sales, total costs (fixed + variable), markups (total sales/total costs) and profitability (1 - total costs/total sales). We employ the following specification:

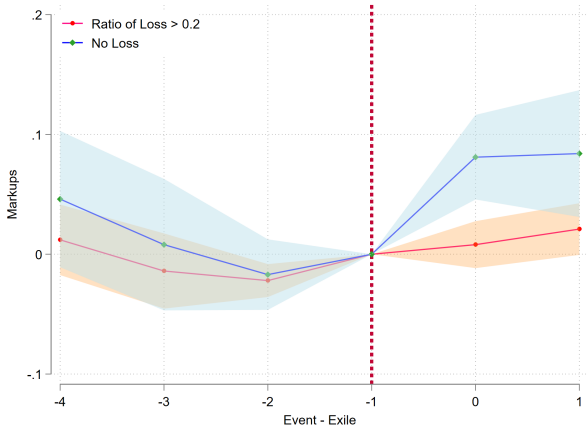
$$Y_{i,t} = \alpha + \beta \text{LossShare}_{i,t-1} + \boldsymbol{\theta X_{i,t-1}} + \delta_i + \gamma_t + \epsilon_{i,t}. \tag{3}$$

where $Y_{i,t}$ is the variable related to market power of the firm i in Congress t. $\text{LossShare}_{i,t-1}$ is the share of loss in political connections measured by Equation 1 in Congress $t-1$. We include lagged firm-level controls $X_{i,t-1}$ including log of total sales, log of total costs and log of total number of political connections. We also include firm and time (Congress) fixed effects and tandard errors are clustered at firm level. The main coefficient of interest is β estimating the average effect of change in loss share of political connections on the change in firm outcomes related to market power. We expect $\beta < 0$ for total sales, markups and profitability, and $\beta > 0$ for total costs. In other words, out main hypothesis is that loss of political connections reduces firm sales but increases total costs, and hence negatively affect firm markups and profitability. We include firm and Congress (time) fixed effects in order to control for unobserved time-invariant firm characteristics as well as the changes to variables driven by aggregate shocks. Furthermore,

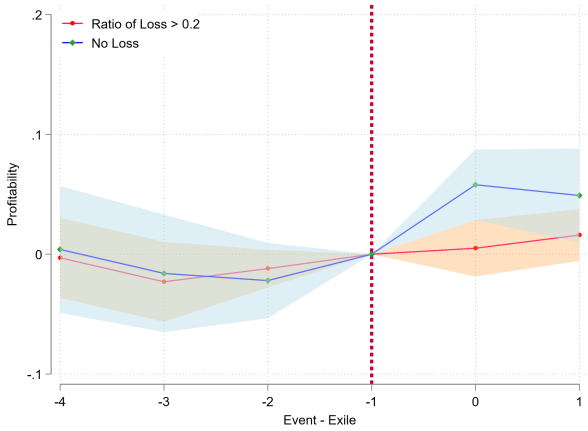
Figure 7: Event Study of Firm Market Power: A Major Loss of Democratic Party in the 112th Congress

This figure plots estimated coefficients and depicts 95% confidence intervals of the effect of committee exile on firm outcomes related to market power. Dependent variable is firm-level markup, which is measured by $\frac{\text{Sales}}{\text{Total Costs}} \times$ industry level scale elasticity, and we plot estimated coefficients and depict 95% CI of firms not losing politicians and losing more than 20% of politicians in the 112th Congress. Firm level controls include log of size, log of cost of goods sold and log of number of political connections. Firm-level cost shares (COGS/Sales) are trimmed at 1% and 99% percentages to avoid outliers. Industry FE is included.

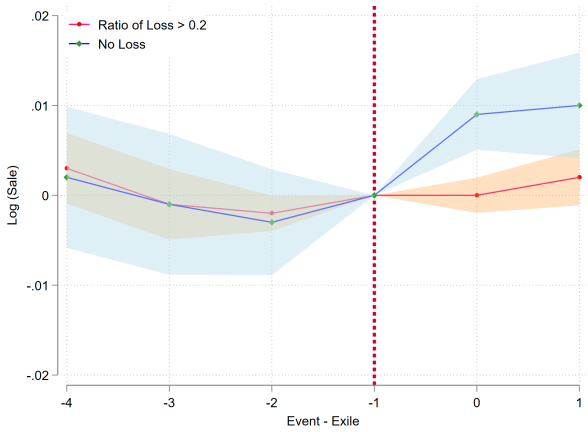
(a) Markups



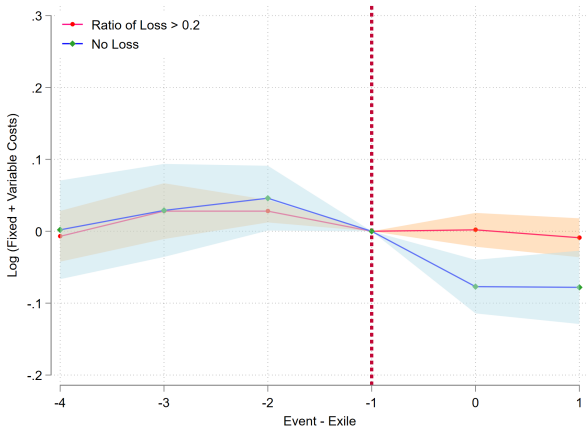
(b) Profitability



(c) Sales



(d) Costs



to control for the effects from industry-level or state-level shocks, we also alternatively include industry-Congress as well as state-Congress fixed effects as robustness checks.

Table 1 reports the estimated coefficients and standard errors of the regression results. From column (1) to (4) we use market power related measures including log of sales, log of total costs, markups and profitability. Although the loss of political connections do not have significant effects on total sales and costs, the signs of coefficients are consistent with our hypothesis. However, loss of political connections does have a significantly negative effect on firm-level markups and profitability which are jointly determined by total sales and costs. Our results show that a 10% increase in successful political connections leads to a 0.58% increase in firm markups, or 0.45% increase in profitability with statistical significance at 1% and 10% levels, respectively. Although the effect on sales and costs are not significant, the signs are still consistent with our hypothesis and the effect on markups and profitability come from sales and costs.

Table 1: Committee Exile in All Congresses

This table reports estimated coefficients and standard errors of the baseline regression results. The main independent variable is the lagged loss share of political connections resulted from committee exile. From column (1) to (4) the dependent variables are log of sales, log of total costs (variable + fixed), firm markups (total sales/total costs) and profitability (1 - total costs/total sales), respectively.In all the regressions we restrict politicians with average seniority in all assigned committees smaller or equal to 3 (6 years). Firm level lagged controls include log of total sales, log of total costs and log of total number of political connections. We also include firm and Congress fixed-effects. Standard errors are clustered at firm level. Firm-level cost shares (COGS/Sales) are trimmed at 1% and 99% percentages to avoid outliers. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)	Log (Total Cost)	Markup	Profitability
Loss Share - Lag	-0.004	0.025	-0.058***	-0.045*
	(0.007)	(0.051)	(0.022)	(0.023)
Log (Total Number of Political Connections) - Lag	0.003**	0.033***	-0.001	-0.003
	(0.001)	(0.009)	(0.004)	(0.004)
Log (Sales) - Lag	0.510***	3.073***	1.252***	0.456***
	(0.038)	(0.298)	(0.231)	(0.164)
Log (Cost of Goods Sold) - Lag	0.011***	0.283***	-0.155***	-0.061***
	(0.003)	(0.029)	(0.026)	(0.019)
R-squared	0.963	0.970	0.832	0.634
No. obs	5,142	5,142	5,142	5,142
Firm FE	Yes	Yes	Yes	Yes
Congress FE	Yes	Yes	Yes	Yes

5.3 Is the effect driven by party loss?

The point of departure of this section is the finding in Table 1 that loss of political connections leads to decrease in firm markups and profitability. However, if the committee exile occurs when there is a loss of control of chamber, a natural concern is that our main

results are driven by party loss in an election cycle. In that case, firms have lower market power because they choose the wrong party to build up political connections, instead of losing political connections from committee exile. Relying on Congressional election results suffer the nonrandom nature for the following reasons. First, firms with exceptionally high market power can affect politics (Zingales, 2017; Eeckhout, 2021), so that election is at least partially endogenous to firms. Second, the publicity of Congressional election always brings about trends in election results beforehand. To address this issue, we count the number of Democrats and Republicans among junior politicians (seniority$\leq$3) connected to the firm, and isolate the subset of firms which donate to more Democrats than Republicans. More Democrats connected imply a "Democratic Partisanship" and they are more likely to acquire information or resources from Democratic Party. Firms donating to more Democrats will have similar exposure to the election loss of Democratic Party. As introduced in Grimmer and Powell (2013), most of exile cases occur to Democrats when Republican Party control the chamber. By comparing firms with Democratic Partisanship, we hypothesis that the effects are stronger compared to Table 1.

We report estimation results in Table 2. For firms with Democratic partisanship, a 10% higher loss share of political connections on average leads to 1.12% decrease in markups and 1.04% decrease in profitability, both of which are stronger than the baseline results in Table 1. Even within firms supporting more Democrats, the quasi-exogenous process of losing political connections, committee exile, could still lead to a decrease in firm market power. Although firms tend to donate to both Democrats and Republicans at the same time (shown in Figure 3), Democrats on average reward firms more in their markups and profitability.

5.4 Within Politicians ever Exiled

Up to now, our empirical analysis have been focusing on the sample of politicians within junior ones, who have similar probabilities to be exiled. However, the junior members who are ultimately exiled could still be different from those not. We perform the analysis within a very restrictive set of committee members who have ever been exiled, or "exile-able" committee members based on records in Grimmer and Powell (2013). First, we create the variable loss share only within committee members who have ever been exiled following Equation 1. Second, we select firms ever donating to this specific group of committee members to keep firms comparable. With the above criteria, we indeed compare the effect of political connections with exile-able committee members on market power, before and after they are exiled.

Table 3 shows the estimation results. Compared to Table 1, the effect is still significant for markups with a smaller magnitude and insignificant for profitability. This is partly driven by larger loss share when restricting the sample of politicians to exiled ones. It may also imply that the committee members who are eventually exiled have lower political power compared to other non-exiled junior members.

Table 2: Firms with Democratic Partisanship

This table reports estimated coefficients and standard errors of the empirical analysis, in which we examine firms that donate to more Democrats and Republicans. The main independent variable is the lagged loss share of political connections resulted from committee exile. From column (1) to (4) the dependent variables are log of sales, log of total costs (variable + fixed), firm markups (total sales/total costs) and profitability (1 - total costs/total sales), respectively. In all the regressions we restrict politicians with average seniority in all assigned committees smaller or equal to 3 (6 years). Firm level lagged controls include log of total sales, log of total costs and log of total number of political connections. We also include firm and Congress fixed-effects. Standard errors are clustered at firm level. Firm-level cost shares (COGS/Sales) are trimmed at 1% and 99% percentages to avoid outliers. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)	Log (Total Cost)	Markup	Profitability
Loss Share - Lag	-0.008	0.077	-0.112**	-0.104**
	(0.010)	(0.077)	(0.050)	(0.053)
Log (Total Number of Political Connections) - Lag	0.004*	0.047**	0.006	-0.006
	(0.002)	(0.020)	(0.009)	(0.008)
Log (Sales) - Lag	0.397***	2.299***	0.908**	0.235
	(0.071)	(0.577)	(0.363)	(0.233)
Log (Cost of Goods Sold) - Lag	0.024***	0.393***	-0.142***	-0.054**
	(0.007)	(0.059)	(0.044)	(0.026)
R-squared	0.976	0.980	0.897	0.722
No. obs	1,099	1,099	1,099	1,099
Firm FE	Yes	Yes	Yes	Yes
Congress FE	Yes	Yes	Yes	Yes

Table 3: Within Committee Members ever Exiled

This table reports estimated coefficients and standard errors of the regression results of restricting politicians within those who have ever been exiled. The main independent variable is the lagged loss share of political connections resulted from committee exile. From column (1) to (4) the dependent variables are log of sales, log of total costs (variable + fixed), firm markups (total sales/total costs) and profitability (1 - total costs/total sales), respectively. In all the regressions , we restrict politicians with average seniority in all assigned committees smaller or equal to 3 (6 years). Firm level lagged controls include log of total sales, log of total costs and log of total number of political connections. We also include firm and Congress fixed-effects. Standard errors are clustered at firm level. Firm-level cost shares (COGS/Sales) are trimmed at 1% and 99% percentages to avoid outliers. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)	Log (Total Cost)	Markup	Profitability
Loss Share (Exile-able Members) - Lag	-0.003	0.002	-0.028**	-0.015
	(0.004)	(0.028)	(0.014)	(0.013)
n_pol_xbl	0.000***	0.006***	0.000	0.000
	(0.000)	(0.002)	(0.001)	(0.001)
Log (Sales) - Lag	0.511***	3.265***	1.346***	0.397**
	(0.041)	(0.360)	(0.310)	(0.164)
Log (Cost of Goods Sold) - Lag	0.011***	0.277***	-0.161***	-0.053***
	(0.004)	(0.035)	(0.034)	(0.018)
R-squared	0.965	0.970	0.847	0.666
No. obs	3,719	3,719	3,719	3,719
Firm FE	Yes	Yes	Yes	Yes
Congress FE	Yes	Yes	Yes	Yes

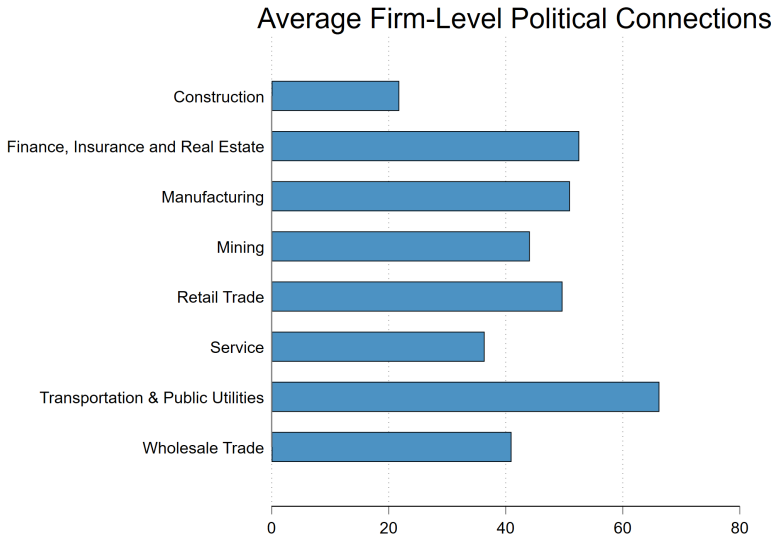
5.5 Heterogeneity

5.5.1 Across Industries

In this section we present some additional findings that explore possible heterogeneity in the effects of political connections on market power. We start from assessing the effect of political connections on market power across different industries. In Figure 8, we plot average firm-level political connections across difference industries. The transportation & public utilities industry has the highest participation rate and on average most committee members connected, followed by manufacturing and finance, insurance & real estate. We also particularly focus on service industry including importantly high-technology companies, whose contributions exploded practically overnight during the height of the tech bubble[19].

Figure 8: Average Firm-level Political Connections across Industries

This figure plots average number of political connections at firm level by industries. Our classification relies on one-digit sic code and calculate average number conditional on connections via campaign contributions. The industries and corresponding participation rates are: construction (26.3%), finance, insurance & real estate (24.7%), manufacturing (20.4%), mining (20.3%), retail trade (17.5%), service (18.2%), transportation & public utilities (50.4%) and wholesale trade (12.6%).



To begin, we focus on the correlation between the concentration of political connections and the concentration of firm sales within industries, measured by HHI for each variable, which is computed as follows:

$$HHI^{\text{sales}}_{j,g,t} = \sum_{i \in \Omega_{j,g}} s^2_{i,j,g,t}, \tag{4}$$

where $HHI^{\text{sales}}_{j,g,t}$ is the sales concentration of industry j in location g at Congress t, $s_{i,j,g,t}$ is the firm i' s share of all sales in industry j located in geography g at Congress t. Similarly, the

[19]https://www.opensecrets.org/industries/background.php?cycle=2022&ind=c5120

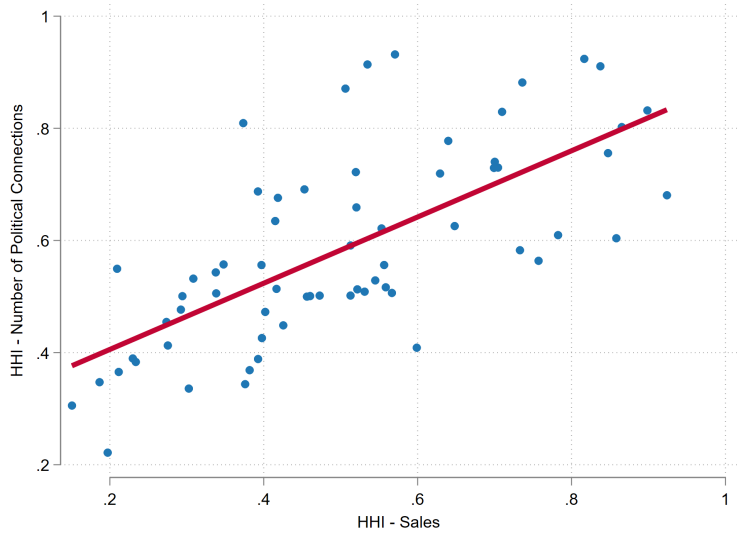
HHI for political connections is computed as:

$$HHI_{j,g,t}^{\text{connections}} = \sum_{i \in \Omega_{j,g}} c_{i,j,g,t}^2, \tag{5}$$

where $HHI_{j,g,t}^{\text{connections}}$ is the connections concentration of industry j in location g at Congress t, $s_{i,j,g,t}$ is the firm i' s share of number of connected politicians in industry j located in geography g at Congress t. We compute both indexes at 4-digit SIC and state level. In Figure 9, we plot the HHI for political connections against the HHI for sales in Congress 112 (2011-2013). The positive slope suggests that industries with higher concentration in sales have higher concentration in political connections.

Figure 9: Average Firm-level Political Connections across Industries

This figure displays scatterplot with linear fit between the HHI for political connections against the HHI for sales in Congress 112 (2011-2013).



To perform the across-industry analysis, we repeat Equation 3 for some important industries. We include either firm and Congress or firm and four-digit sic code × Congress fixed-effects to capture industry level shocks that might affect firm markups. Table 4 reports the estimated results of heterogeneity across industries. While all the coefficients have negative signs, the effect is strongest for finance, insurance & real estate industry. For service industry, the effect is insignificant with firm and Congress fixed effects but becomes significantly negative with firm and industry-Congress fixed effects. The effects for manufacturing industry and Service industry are stronger after 2007. Overall, due to the fact that most public firms in our sample are manufacturing firms, the effects we observe are mainly driven by manufacturing industry.

Table 4: Heterogeneity across Industries

This table reports estimated coefficients and standard errors of the regression results of heterogeneity across different industries. Firms are restricted to finance, insurance & real estate industry from columns (1) to (2), manufacturing from (3) to (5), service from (6) to (7) and transportation & public utilities from (8) to (9). In all the regressions , we restrict politicians with average seniority in all assigned committees smaller or equal to 3 (6 years). In all the regressions, dependent variable is firm-level markups measure by total sales/(fixed + variable costs). The main independent variable is loss share and we control for log of total sales, log of total assets and log of total number of political connections, all of which are lagged for one period. We also include either firm and Congress or firm and industry-Congress fixed-effects. Standard errors are clustered at firm level. Firm-level cost shares (COGS/Sales) are trimmed at 1% and 99% percentages to avoid outliers. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Finance		Manufacturing		Manu. from 2007	Service		Transportation	
					Markups				
Loss Share - Lag	-0.292***	-0.189**	-0.013	-0.084	-0.278*	-0.060	-0.157**	-0.050	-0.051
	(0.087)	(0.086)	(0.029)	(0.084)	(0.156)	(0.038)	(0.062)	(0.055)	(0.053)
Log (Total No. of Pol Conn) - Lag	-0.021	-0.014	0.000	0.002	-0.025	0.006	-0.004	0.010	0.004
	(0.021)	(0.016)	(0.004)	(0.008)	(0.017)	(0.007)	(0.009)	(0.008)	(0.007)
Log (Sales) - Lag	2.072***	0.833**	0.618***	0.495*	0.610	-0.189	1.006	0.284	0.577*
	(0.613)	(0.418)	(0.191)	(0.293)	(0.515)	(0.666)	(0.637)	(0.311)	(0.347)
Log (Cost of Goods Sold) - Lag	-0.289***	-0.138***	-0.084***	-0.057*	-0.051	-0.017	-0.191**	-0.012	-0.034
	(0.061)	(0.045)	(0.024)	(0.034)	(0.049)	(0.085)	(0.088)	(0.031)	(0.036)
R-squared	0.820	0.889	0.809	0.894	0.897	0.775	0.889	0.569	0.678
No. obs	897	835	1,807	1,154	427	563	431	1,166	1,074
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Congress FE	Yes	No	Yes	No	No	Yes	No	Yes	No
Industry × Congress FE	No	Yes	No	Yes	Yes	No	Yes	No	Yes

5.5.2 Level of Political Connections

Second, we evaluate the effect as a function of level of political connections, measure by number of connected committee members. We ask whether firms with a higher level of political connections experience a larger or smaller effect of loss share on market power. We begin by defining a dummy of big donor equal to one if a firm has above-median (by Congress) number of connected members, and zero if it has below-median number of connected members. We let the dummy of big donor interact with loss share and write the specification as:

$$\begin{aligned} Y_{i,t} =& \alpha + \beta_1 \text{LossShare}_{i,t-1} + \beta_2 \text{Big Donor}_{i,t-1} + \\ & \beta_3 \text{LossShare}_{i,t-1} \times \text{Big Donor}_{i,t-1} + \boldsymbol{\theta X_{i,t-1}} + \delta_i + \gamma_t + \epsilon_{i,t}, \end{aligned} \tag{6}$$

in which we compare the effects of the same loss share across firms with different levels of political connections, conditional on campaign contributions to committee members. Table 5 reports estimated coefficients and standard errors. A loss share of 10% leads to a 0.85% larger decrease of markups for firms with above-median number of political connections, compare to those with below-median number of political connections. The effect is stronger for firms connected to more committee members. In other words, firm-level markups drop more when losing more political connections.

5.6 Robustness

We provide several additional robustness checks for the specification on all Congresses. First, we restrict our sample of firms within those who have ever donated to exiled members to make firms more comparable. Table 9 reports the estimated coefficients and standard errors of the results.

Second, party leaders could have a crucial role in congressional committee assignments. If party leaders have some prior decisions on whom to be exiled, then connections with party leaders may help firms to alleviate committee exile. To address this concern, we examine whether a firm has campaign contributions to Democratic or Republican party leaders in an election cycle. We construct dummies of firm connection with Democratic or Republican party leaders and control for the dummies on the basis of Equation 3. Table 10 reports the estimated coefficients and standard errors of the results. The loss share still has a significantly negative effect on markups and profitability, after controlling for connection with party leaders, implying that even party leaders do not have privileged knowledge on committee exile.

Third, there is still possibility that at least part of committee exile can be predicted by firm characteristics. To disentangle the predicted and unpredicted part of loss share, we employ the method proposed by Borusyak and Hull (2020) and execute the following steps. First, we regress loss share on a series of firm characteristics, including number of political connections, firm total campaign contributions, firm campaign contributions to Democrats, sales and cost of goods sold, all of which are in logs. Second, we compute loss share predicted by the above

Table 5: Heterogeneity across Number of Political Connections

This table reports estimated coefficients and standard errors of the regression results of heterogeneity across number of political connections. The main independent variable is the dummy of big fonor, the lagged loss share of political connections resulted from committee exile and their interaction. From column (1) to (4) the dependent variables are log of sales, log of total costs (variable + fixed), firm markups (total sales/total costs) and profitability (1 - total costs/total sales), respectively. In all the regressions , we restrict politicians with average seniority in all assigned committees smaller or equal to 3 (6 years). Firm level lagged controls include log of total sales, log of total costs and log of total number of political connections. We also include firm and Congress fixed-effects. Standard errors are clustered at firm level. Firm-level cost shares (COGS/Sales) are trimmed at 1% and 99% percentages to avoid outliers. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)	Log (Total Cost)	Markup	Profitability
Loss Share	-0.003	0.035	-0.049**	-0.044*
	(0.007)	(0.054)	(0.022)	(0.025)
Big Donor - Lag=1	0.000	0.026	-0.007	-0.014
	(0.002)	(0.018)	(0.007)	(0.010)
Big Donor - Lag=1 × Loss Share	-0.004	-0.023	-0.064*	-0.009
	(0.011)	(0.088)	(0.039)	(0.042)
Log (Sales)	0.518***	3.151***	1.263***	0.462***
	(0.038)	(0.300)	(0.226)	(0.164)
Log (Cost of Goods Sold)	0.011***	0.282***	-0.156***	-0.062***
	(0.003)	(0.029)	(0.026)	(0.019)
Constant	7.640***	-43.732***	-17.739***	-6.784***
	(0.589)	(4.598)	(3.402)	(2.480)
R-squared	0.963	0.969	0.832	0.634
No. obs	5,142	5,142	5,142	5,142
Firm FE	Yes	Yes	Yes	Yes
Congress FE	Yes	Yes	Yes	Yes

variables and residuals. Third, we replace the independent variable in Equation 3 with predicted loss share and residuals. Table 11 reports the estimated coefficients and standard errors of the results. After removing predicted loss share, the unpredicted part (residual) still has a significantly negative effect on markups and profitability.

6 Channels

6.1 Potential Channels

In this section we delve into the channels via which political connections affect firm market power. Politics can essentially alter government policy-making and resources allocation process in a number of ways. In this paper, however, we concentrate short-term effects of government resources allocation on sales and costs for the following two reasons. First, firms seek short-term access to committee members via campaign contributions (Grimmer and Powell, 2013, 2016; **?**). Second, our identification strategy leverages committee exile, which creates some quasi-exogenous variations in the political connections. In particular, we focus on government procurement contracts and financial subsidies. On one hand, by exercising more valuable government procurement contracts, firms can enlarge their sales and achieve increasing return to scale. On the other hand, more subsidies reduce cost of production. Both lead to higher market power.

To illustrate the effect of different channels, we repeat the event study approach described in Equation 2 and replace the dependent variable with the following outcomes. First, we measure value of exercised government procurement contracts by the sum of procurement values exercised in one Congress, which is computed as nominal value of a contract divided by number of contracted time[20]. Second, since committee members may also have political influence in their congressional districts and local government, we measure financial subsidies as total value of subsidies received from federal, state or local government.

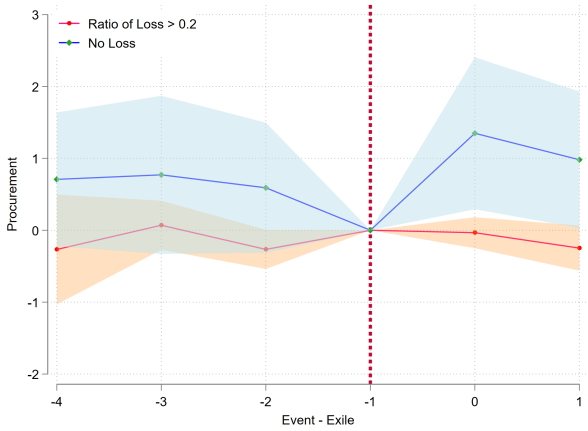
Figure 10 shows estimation results of the two channels in an event study setting. After committee exile in the 112th Congress, firms without loss of political connections are able to exercise more government procurement contracts in values, and receive more financial subsides compared to firms with a high loss share (>0.2). As shown in Table 7, values of exercised procurement contracts are worth more than 400 times of financial subsidies on average, so we think that procurement might be the main channel explaining the effects of political connections on firm sales and hence market power. At the same time, financial subsidies can ba an important alternative channel affecting firm total costs.

[20]In usaspending.gov, there is no accurate data on how much the contract is exercised each year, so we use a two-year average value to approximate for value exercised in each Congress.

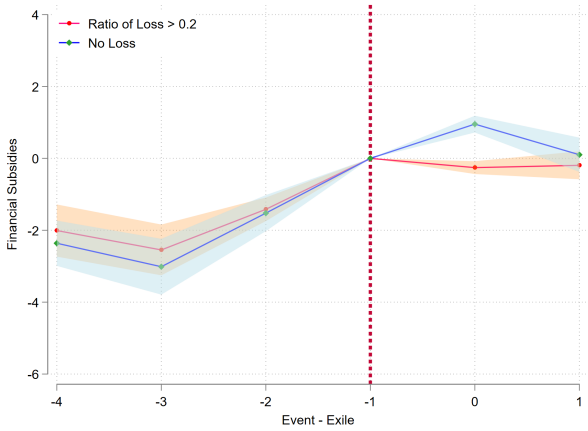
Figure 10: Event Study of Channels: A Major Loss of Democratic Party in the 112th Congress

This figure plots estimated coefficients and depicts 95% confidence intervals of the channels via which political connections may affect market power. Dependent variable include log of value of procurement contract exercised, and log of financial subsidies guaranteed by federal, state or local government. We plot estimated coefficients and depict 95% CI of firms not losing politicians and losing more than 20% of politicians in the 112th Congress. Firm level controls include log of size, log of cost of goods sold and log of number of political connections. Industry FE is included.

(a) Procurment Contracts



(b) Financial Subsidies



6.2 How do firms respond?

If firms seek short-term access to committee members, loss of political connections will lead to an immediate switch to other incumbent committee members. To illustrate how firms strategically build up political connections after committee exile, we still focus on 111th Congress in which Democratic Party lost many seats in Congressional committees. Our hypothesis is that firms losing more political connections from committee exile in 111th Congress would donate to more Republicans thereafter.

We verify our hypothesis in Figure 11, in which we employ the event study approach. We plot log of number of Republicans connected for firms without loss or higher loss share (> 0.2), before and after committee exile. Compared to firms not losing political connections, firms with higher loss donate to more incumbent Republicans after the defeat of Democratic party in the 111th Congress. Although it takes some time for the effects of these new connections to fully exert, it still leads to an underestimation of the differences in markups between the more affected firms and the less affected ones.

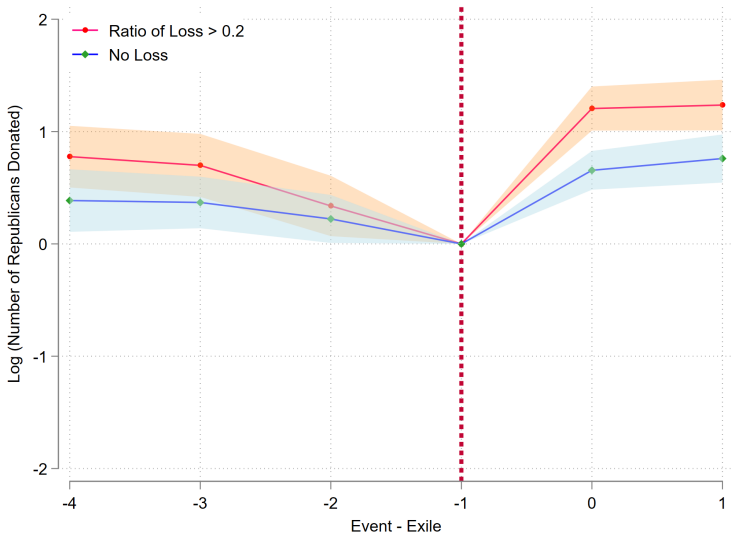
7 Discussions

7.1 Limitations of Empirical Evidence

Although we provide a set of robustness checks to make firms and politicians comparable with respect to their observable characteristics, the very first concern is about the external

Figure 11: Number of Connected Republicans: Around a Major Loss of Democratic Party in the 112th Congress

This figure plots estimated coefficients and depicts 95% confidence intervals of number of connected Republicans in the Congress before and after 111th Congress, in which Democratic party suffered a major loss. Dependent variable is log of number of Republicans connected. We plot estimated coefficients and depict 95% CI of firms not losing politicians and losing more than 20% of politicians in the 112th Congress. Firm level controls include log of size, log of cost of goods sold and log of number of political connections. Industry FE is included.



validity. Our estimated effects of loss of political influence on market power are based on low-seniority committee members, to which committee exile mainly happens. In other words, our results are local estimates for the low-seniority politicians with low political power, among the universe of congressional committee members. Furthermore, anticipating that low-seniority committee members have more vulnerable positions, firms may seek very short-term access to junior committee members with campaign contributions. Senior committee members are generally more powerful and less likely to be exiled. Thus, we might underestimate both the magnitude and persistence of the effects resulted from committee exile.

Second, the measures we use for firm market power are not perfect. As discussed in Syverson (2019), accounting data is not constructed to measure economic markups. In particular, part of fixed costs, measured by SG&A in Compustat, increases with firm size, while part of variable costs, measured by COGS in Compustat, might be fixed. There is no explicitly distinguishable definitions of different accounting variables. Moreover, classification of expenses by COGS and SG&A may vary across sectors. In this paper, we use the sum of both COGS and SG&A to denote input costs. Furthermore, an important assumption behind the markup measure is constant return to scale in the production function. If we assume increasing return to scale in the production function, then higher sales due to more government procurement contracts reduce the per unit production costs. In that case, we are not able to capture the positive effects of political connections on firm-level output elasticity by using the

industry-level output elasticities, leading to an underestimation of the effects.

Third, with the cost-based method to measure firm-level markups, we can at best obtain an industry-time level output elasticity. If we assume increasing return to scale (IRS) in the production function, we may underestimate the effects of political connections without identifying the effects of political connections on firm-level output elasticity.

7.2 A Quantitative Framework: Insights

We incorporate our main findings into a simple quantitative model in the spirit of Atkeson and Burstein (2008) and De Loecker, Eeckhout, and Mongey (2021), with two key features. The details of the model is illustrated in Section A. First, there are oligopolistic output markets with heterogeneous firms facing competitive input markets. Second, apart from a private final good consumed by the households, there is a public final good that is produced by a selected set of firms and purchased by the government as in García-Santana et al. (2022). Similar to the entry cost to the private markets, there is an entry cost to enter the public good markets. This entry cost can be seen as the cost to get access to politicians. Firms are able to get more government resources or favorable regulations through better revealing their types or productivities. Having access to government resources allow them to produce more and produce at lower costs. After entering the public good market, firms competing for government procurement contracts or other government resources.

There are two channels affecting on firms' markups in the model. First, an increase in the entry cost public good markets reduces competition and increase the markups in the public good markets. Second, if we assume the tax rate is determined endogenously and government uses tax revenues to fund the government procurement contracts, an increase in the value of government procurement contracts relative to firm sales increase the weight of markups in the public good markets. Since markups are higher in public good markets due to lower competition, the overall markups further increase with the tax rates. However, if the increase in overall value of government procurement surpasses the increase in the cost of political connections, firms may find it cheaper to enter the public good markets in which competition increases.

The model allows us to disentangle the effects of an increase in the costs to build up political connections on firms' markup distribution into the two channels. With our estimates from the first empirical part, we find that an increase in the costs to build up political connections accounts for 15% of the rise in firm markups during 1993-2014. In particular, the increase in the entry cost of political connections account for 105% of this affect. At the same time, the increase in the taxes used to fund government procurement contracts drives the effect in a reserve way (-5%), suggesting that the increase in overall markups is driven almost all by the increase in the weight of public good markups instead of the magnitude of public good markups.

7.3 Implications

Our results convey some macroeconomic implications. Our empirical evidence suggests that political connections increase market power. Since the effects of political connections exert increasing return to scale, as shown in the previous findings and by Cowgill et al. (2022), high-markup firms tend to build up more political power in order to obtain further higher markups. Large firms use money to exploit the political system and increase their dominance, and hence creates the circularity (Callander et al., 2022) within "vicious circle" between politics and market power (Zingales, 2017; Eeckhout, 2021).

How do we interpret the increase in the costs of political connections? It is a generalized outcome of the increase in the cap of campaign contributions proposed by the Bipartisan Campaign Reform Act of 2002, or Citizens United s. FEC, which is FEC's approval of independent expenditure committees to accept unlimited contributions from corporations. Such changes in policies would boost the investment in political connections and raise the unit price of political connections. Hence, costs of building up political connections increase. Since the effects of political connections exert increasing return to scale, we expect that firms with high market power are the first to increase their investments in political connections. The reason is that compared to their competitors with low market power, firms with high market power benefit more from the political connections. Therefore, the cutoff for firms to participate in building up political connections increases. Firms with low market power are crowded out, leading to a more right-skewed markup distribution.

8 Conclusion

Political connections have an indispensible foothold in firm's non-market environment. To provide a systematic and quantitative study on the effect of political connections, we exploit committee exile as a quasi-exogenous shock in Congressional committee assignments. Our identification strategy allows us to conceive the sensible role of political connections, which reward firms with higher market power via government procurement contracts and financial subsidies. Furthermore, our model allows us to disentangle the contributions of corporate political connections to increasing market power of large firms. Taken together, this paper is suggestive of the contributing role of political connections in the rise of market power of large firms over time.

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A The Model

To quantify the general-equilibrium effects of political connections on market power, we develop and estimate a parsimonious model of imperfect competition and government procurement in a large economy. We build on De Loecker, Eeckhout, and Mongey (2021) and García-Santana, di Giovanni, Jeenas, Moral-Benito, and Pijoan-Mas (2022) with two main assumptions. First, there are many markets where heterogeneous firms compete strategically in their own, small markets. Second, there is a private good submarket and public good submarket within each market, and all firms in a market choose not only whether to enter the private submarket, but also whether to build up political connections to access the public submarket. We start with a model in which labor is the only input to production.

A.1 Setup

Environment. Time is discrete. There are two types of agents: households and firms. Households are identical, consume goods, supply labor and trade shares in a representative portfolio of all firms in the ecnomy which pay dividends. There are a continuum of size 1 of households indexed by i. Firms are organized in a continuum of markets indexed $j \in [0, 1]$. There are two final goods in the economy: the private sector good, Y_p used by households to consume, and the public sector good Y_g, purchased by the government to produce public consumption. Each market contains M potential entrant firms, of which, $M_{jp} \leq M$ firms choose to pay the entry cost ϕ_p enter the private good market and produce. And $M_{jg} \leq M$ firms choose to pay a fixed entry cost ϕ_g in order to build up political connections and enter the public good market[21]. To make sure the set of firms entering the public submarkets also enters the private ones, we assume $\phi_p \leq \phi_g$. The entering firms are indexed $i \in \{1, ..., M_{jp}\}$ and $i \in \{1, ..., M_{jg}\}$, respectively. A single firm produces a single good indexed ij.

Household. The utility of consumption of the differentiated final goods is the double Constant Elasticity of Substitution (CES) aggregator of consumption utility from goods within markets and across the continuum of markets. The cross-market elasticity of demand is denoted $\theta_p > 1$ and $\theta_g > 1$. The within-sector elasticity of demand is denoted $\eta_p > 1$ and $\eta_g > 1$. These elasticities satisfy $\eta_p > \theta_p$ and $\eta_g > \theta_g$, indicating that both households and government are more willing to substitute goods within a market rather than across markets. Households discount the future at rate β, choose consumption of each good c_{ijt} and inelastically supply one

[21] As long as we assume the entry cost is higher for the public submarkets, it is easy to show that firms choosing to enter the public submarket will always enter the private one.

unit of labor. A household maximizes:

$$\sum_{t=0}^{\infty} \beta^t U(C_t - \bar{\psi}^{-\frac{1}{\psi}} \frac{N_t^{1+\frac{1}{\psi}}}{1+\frac{1}{\psi}}) \quad \text{where} \quad C_t = [\int_0^1 c_{jpt}^{\frac{\theta_p}{\theta_p - 1}} dj]^{\frac{\theta_p - 1}{\theta_p}} \quad \text{and} \quad c_{jpt} = [\sum_{i=1}^{M_{jpt}} M_{jpt}^{-\frac{1}{\eta_p}} c_{ijpt}^{\frac{\eta_p}{\eta_p - 1}}]^{\frac{\eta_p - 1}{\eta_p}}. \tag{7}$$

Households consume their income in each period and buy X_t share of portofolio of firms at price Q_t. Households receive after-tax labor income W_t and returns on shares due to sale and dividends Π_t. Households do not save. Therefore, their budget constraint is given by:

$$\int_0^1 \sum_{i=1}^{M_{jpt}} p_{ijpt} c_{ijpt} dj + Q_t X_{t+1} \leq (1-\tau) Z_t = (1-\tau)(W_t N_t + (Q_t + \Pi_t) X_t). \tag{8}$$

Government. The government randomly select a measure M_{jgt} of firms from the set of firms that enter the public good sector and purchases from these selected firms. I_g represents the set of sectors with firms selected by the government. Similar to private submarkets, the final goods of public sectors are imperfectly competitive. The government collect lumpsum tax $T = \tau Z$ and choose their consumption c_{ijgt} to maximize their utility:

$$\sum_{t=0}^{\infty} \beta^t U(C_t) \quad \text{where} \quad C_{gt} = [\int_{I_g} c_{jgt}^{\frac{\theta_g}{\theta_g - 1}} dj]^{\frac{\theta_g - 1}{\theta_g}} \quad \text{and} \quad c_{jgt} = [\sum_{i=1}^{M_{jpt}} M_{jgt}^{-\frac{1}{\eta_g}} c_{ijgt}^{\frac{\eta_g}{\eta_g - 1}}]^{\frac{\eta_g - 1}{\eta_g}}, \tag{9}$$

and the buget constraint for the government is given by:

$$\int_{I_{jg}} \sum_{i=1}^{M_{jgt}} p_{ijgt} c_{ijgt} dj \leq T_t = \tau Z_t. \tag{10}$$

Firm. Firms are heterogneous in productivity denoted by z_{ijt}. The production technology is linear in labor such that $y_{ijt} = y_{ijpt} + y_{ijgt} = z_{ijt}(n_{ijpt} + n_{ijgt})$. Firms need to use resource equivalent to ϕ_g produced by $\frac{\phi_g}{W}$ unit of labor to build up political connections in order to have a possitive probability to obtain a government contract. Firms face no adjustment costs over time and do not accumulate assets. Since there is no aggregate shocks, we can drop time subscripts and discuss the firm's static problem that will eventually maximize firm's uility in infinite time horizon.

Timing. At the begining of each period, productivity shocks for the M potential firms in each sector are realized, which determines z_{ijt}. Given the realization of the shocks, potential firms decide whether to operate in the private good submarket and whether to build politicla connections and enter the public good submarket. Then the government selects firms to purchase from and firms produce or stay out.Firms that operate in the market make their production choices and pay wages. In the next period, all firms productivity evolves.

Market Competition and Equilibrium. With a finite nuber of firms in each market, firms

exert market power. We follow De Loecker, Eeckhout, and Mongey (2021) and model firm's behavior by means of Cournot quantity competition. Firms indirectly compete with all firms in the economy but there are no strategic interactions between a given firm in market j and another firm in market j'. Each firm is therefore infinitesmially small relative to all firms in other markets and take the price indices of all other markets p_{-j} as given.

Within a market j, there is strategic interaction within either public and private submarket. Firm i chooses its quantity y_{ijp} and y_{ijg}, taking the quantities y_{-ijp} and y_{-ijg} of its $M_{jp}-1$ and $M_{jg}-1$ competitors as given, respectively.

Since we assume private and public sectors are two seperate submarkets, a firm's strategy in the public sector does not have an impact on the price of its good in the private sector(this must hold). Without financial frictions, a firm's strategy in the public sector will not directly affect its strategy in the private sector. Therefore, the two choices of output quantities y_{ijp} and y_{ijg} by a given firm will not affect each other.

Then, given market demand, the firm maximizes its profit:

$$\begin{aligned}\pi(y_{ijp}, y_{ijg}; \mathbf{y}_{-ijp}, \mathbf{y}_{-ijg}) = \max_{y_{ijp}, y_{ijg}, \mathbb{1}(\phi_g>0)} & p(y_{ijp}; \mathbf{y}_{-ijp}, P_p, Y_p) y_{ijp} - \frac{W}{z_{ij}} y_{ijp} - W\phi_p \\ & + \mathbb{1}(\phi_g > 0)\big(p(y_{ijg}; \mathbf{y}_{-ijg}, P_g, Y_g) y_{ijg} - \frac{W}{z_{ij}} y_{ijg} - W\phi_g\big). \end{aligned} \tag{11}$$

A.2 Political Connections and Public Procurement

The government has control over the subset of goods purchased by the public sector. For simplicity, the model features a basic random selection rule: any firm that pays the entry cost into the public sector ϕ has the same probability of being selected ($d_{it} = 1$). We assume a fixed tax rate τ and $T = \tau Z$ $(= WN + \Pi)$. Entry cost ϕ_g represents the average campaign contributions given by the firms to politicians in order to reveal their productivity. In the simple model without saving, we assume the political connection is temporary and only last until the start of next period.

The government follows a simple stochastic rule for the allocation of procurement contracts based on the number of applications (all political connected firms). In this case, the total number of selcted goods/firms are fixed to $\{G_{jg}\}_{j\in J}$ and the probability of a firm being selcted depends both on G_{ig} and the number of participated firms M_{jg} in sector j: $Pr(d_{it} = 1|\phi > 0) = \frac{G_{jg}}{M_{jg}}$.

A.3 Comparative Statics

In this section, we study the effects of changing parameters on market structures. In particular, we focus on the change of entry cost into the public submarkets ϕ_g. In year 2002, the restrictions on the limits of political contributions by both CEOs and firms were lifted, leading to the increase in contributions by most participated CEOs and firms. Although the overall participant rate among listed firms does not decrease, considering the increase in overall

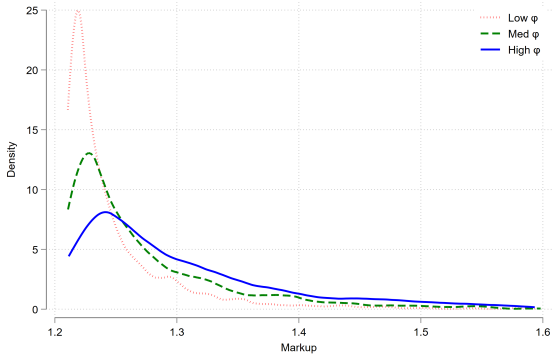
productivity and sales among these firms, the participant rate would have decreased should the productivity distribution of firms hold the same. An increase in the entry cost to build political connections ϕ_g helps to generate the decrease in the participant rate of political contributions. In this paper, we simplify the procedure of government procurement decisions and use the increase in ϕ_g to discuss the general equilibrium effects driven by the increase in political contributions cap.

Results. Figure 12 depicts our model predictions. Holding the distribution of firm productivity, market structure and the number of government contracts the same, an increase in ϕ_g leads to a decrease in entrants into the public submarkets and thus an increase in firms' markup of the goods sold to the government, and sales are reallocated to higher markup firms, both contribute to the higher "political" markup. The production in the private submarkets is not affected if we fix the price of the final private good to 1. Therefore, the increase in firms' overall markups mostly reflect a compositional effect.

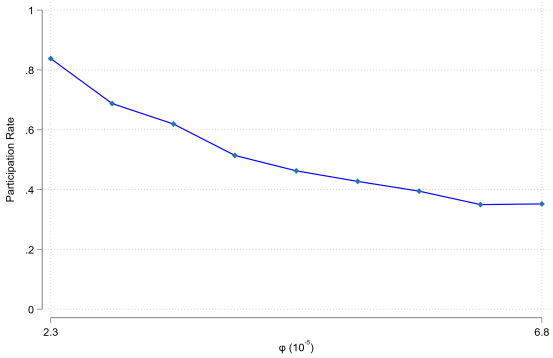
Figure 12: Model Predictions

This figure visualizes model predictions on the effect of ϕ. Panel (a) depicts distribution of markups under high and low ϕ scenarios. Panel (b) plots participation rate of political connections against different values of ϕ.

(a) Distribution of Markups



(b) Comparative Statics



A.4 Estimation

We estimate the model using the data from year 2000 to 2014 (107th-113th Congress), at firm-Congress level. As shown in Table 6, we choose a set of external parameters from previous literature and data, and estimate parameters that matches the key moments of the data. At this stage, apart from externally chosen parameters (elastiticity of substitutes η_g, η_p, θ_g, θ_p, preference taste $\bar{\psi}$ and labor supply elasticity ψ), there are 4 parameters to be estimated: market structure M, variance of firm productivity σ, public submarkets entry cost ϕ_g and tax rate to fund government procurement τ. The estimates in different period are independent because the model is static. We do not specify functional forms in the main estimation as they can be recovered non-parametrically.

A.4.1 Estimation Procedure

Market. We identify the number of potential firms within each market by average markups from the data. Average markups will increase as number of potential firms decrease. The variance of markups within each market is determined by the distribution of firm productivity.

Government procurement. The tax rate τ to fund government procurement can be estimated in two ways. Following García-Santana et al. (2022), τ can be directly identified from the share of government procurement contract value in total sales. On the other hand, we estimate the increase in markup in return to political contributions β_{exile} in our baseline results, as shown in Table **??**. In that case, we can identify τ indirectly by matching it to the moment $\beta_{exile} \times \overline{\text{Contributions}}$.

Table 6: Model Parameters

This table shows the parameters externally chosen or to be estimated in the model.

(a) External Parameters

Parameter	Symbol	Value	Source
Goods Market			
Elasticity of Substitutes within private submarkets	η_p	5.75	De Loecker et al. (2021)
Elasticity of Substitutes across private submarkets	θ_p	1.2	De Loecker et al. (2021)
Elasticity of Substitutes within public submarkets	η_g	5.75	De Loecker et al. (2021)
Elasticity of Substitutes within private submarkets	θ_g	1.2	De Loecker et al. (2021)
Labor Market			
Labor supply elasticity	ψ	0.25	Chetty et al. (2011)
Government Procurement Contracts			
Value of procurement contracts/Total Sales	$\tau_{t=107\text{th Congress}}$	0.0020	Sample Average
	$\tau_{t=108\text{th Congress}}$	0.0026	
	$\tau_{t=109\text{th Congress}}$	0.0036	
	$\tau_{t=110\text{th Congress}}$	0.0104	
	$\tau_{t=111\text{th Congress}}$	0.0784	
	$\tau_{t=112\text{th Congress}}$	0.0712	
	$\tau_{t=113\text{th Congress}}$	0.1128	

(b) Calibrated Parameters: By Congress

Parameter Symbol	Standard Deviation of Firm productivity σ_t	Entry Cost of Political Connections $\phi_{g,t}$ $(\times 10^{-6})$
107th Congress	0.059	1.751
108th Congress	0.070	1.904
109th Congress	0.081	2.984
110th Congress	0.075	10.078
111th Congress	0.147	50.926
112th Congress	0.049	19.934
113th Congress	0.064	70.592

A.4.2 Estimation Results

Market structure M have similar effect on average markups as entry cost ϕ_g. To focus on the effect of public submarkets, we estimate M, firm productivity dispersion σ and $\bar{\psi}$ using the first Congress years with comprehensive procurement, contribution and other firm financial data (2001-2002) and set the values of the two parameters of the rest years equal to the ones from 2001-2002. The estimated parameters are displayed in Table 6b.

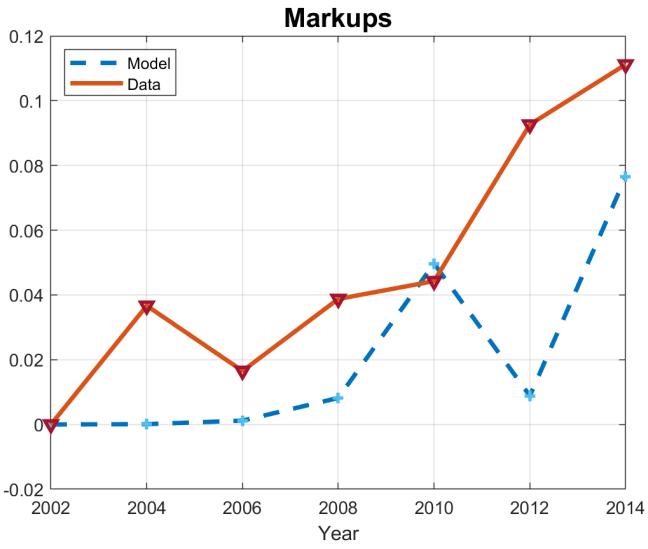
Consistent with the decreasing in political connection participation, we observe an increasing in entry cost ϕ_g of public submarkets. Second, the overall ratio of contract value over sales increases, leading to an increase in τ. As discussed in section A.3, the increase in the two parameters will lead to an increase in the average and variance of markups.

A.4.3 Implications

In the previous section, we do not target the distribution of markups. With the estimation results, we can now analyze the contribution to the rise of markups from two channels: competition within the public submarkets and increase in the output of public good (government expenditures). We first compare the increase in markups from the model with the ones obtained from the data. Second, we decompose the rise in markups into the two channels mentioned above. In the end, we anaylze the change of wages and employment over time.

Markups. With the estimates obtained from the previous section, our model shows that around 15% of the increase in firm average markups is driven by the increase in political connections. We decompose the change in markups into the two channels: ϕ_g and τ by shutting down one of the two channels. Over the period, the changes in entry cost donimates the changes in markups and account for almost all of the rise of markups. At the same time, the increase in tax rate τ contribute to the increase of markups for large firms.

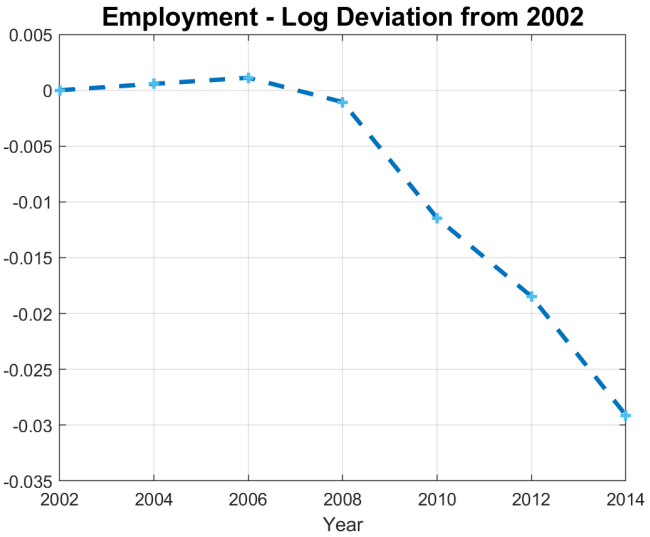
Figure 13: Markups: Data vs. Model



Labor Markets. Our model predicts a decrease in equilibrium employment. The

employment decreases because for a given an equilibrium wage, firms with higher market power sell less at higher prices and thus hire fewer workers.

Figure 14: Implications: Employment



A.5 Demand

A.5.1 Household

$$Y = \left(\int_j \left(\frac{1}{J_p}\right)^{\frac{1}{\theta_p}} \left(\sum_i \left(\frac{1}{M_{jp}}\right)^{\frac{1}{\eta_p}} y_{ijp}^{\frac{\eta_p - 1}{\eta_p}} \right)^{\frac{\eta_p}{\eta_p - 1} \frac{\theta_p - 1}{\theta_p}} \right)^{\frac{\theta_p}{\theta_p - 1}} \tag{12}$$

subject to the budget constraint

$$\int_j \sum_i p_{ijp} y_{ijp} dj \leq (1 - \tau) Z_p (= WN + \Pi) \tag{13}$$

where Z_p is the total income of household in each period. Then the optimization problem can be written as:

$$\mathcal{L} = \left(\int_j \left(\frac{1}{J_p}\right)^{\frac{1}{\theta_p}} \left(\sum_i \left(\frac{1}{M_{jp}}\right)^{\frac{1}{\eta_p}} y_{ijp}^{\frac{\eta_p - 1}{\eta_p}} \right)^{\frac{\eta_p}{\eta_p - 1} \frac{\theta_p - 1}{\theta_p}} dj \right)^{\frac{\theta_p}{\theta_p - 1}} - \Lambda \left(\int_j \sum_i p_{ijp} y_{ijp} dj - (1 - \tau) Z_p \right) \tag{14}$$

which leads to

$$\frac{y_{i'jp}}{y_{ijp}} = \left(\frac{p_{i'jp}}{p_{ijp}}\right)^{-\eta_p} \Leftrightarrow \frac{\sum_{i'} p_{i'jp} y_{i'jp}}{y_{ijp}} = \frac{\sum_{i'} p_{i'jp}^{1-\eta_p}}{p_{ijp}^{-\eta_p}} \Leftrightarrow y_{ijp} = \frac{Z_{jp} p_{ijp}^{-\eta_p}}{p_{jp}} \tag{15}$$

where $p_{jp}y_{jp} = Z_{jp} = \sum_{i'} p_{i'jp}y_{i'jp}$ and $p_{jp} = \Big(\sum_i (\frac{1}{M_{jp}}) p_{ijp}^{1-\eta_p}\Big)^{\frac{1}{1-\eta_p}}$.
Re-write the above lagarangian equation use sector level output and price y_{jp} and p_{jp}:

$$\mathcal{L} = \left(\int_j (\frac{1}{J_p})^{\frac{1}{\theta_p}} y_{jp}^{\frac{\theta_p - 1}{\theta_p}} dj\right)^{\frac{\theta_p}{\theta_p - 1}} - \Lambda\left(\int_j p_{jp}y_{jp}dj - (1-\tau)Z_p\right) \tag{16}$$

and similar to the results above

$$\frac{y_{j'p}}{y_{jp}} = (\frac{p_{j'p}}{p_{jp}})^{-\theta_p} \Leftrightarrow \frac{\sum_{j'} p_{j'p}y_{j'p}}{y_{jp}} = \frac{\sum_{j'} p_{j'p}^{1-\theta_p}}{p_{jp}^{-\theta_p}} \Leftrightarrow y_{jp} = \frac{Z_p p_{jp}^{-\theta_p}}{P_p} \tag{17}$$

where $p_p y_p = Z_p = \int_j p_{jp}y_{jp}$ and $P_p = \Big(\int_j (\frac{1}{J})^{\frac{1}{\theta_p}} p_{jp}^{1-\theta_p}\Big)^{\frac{1}{1-\theta_p}}$.

A.5.2 Government

$$Y = \left(\int_j (\frac{1}{J_g})^{\frac{1}{\theta_g}} \Big(\sum_i (\frac{1}{M_{jg}})^{\frac{1}{\eta_g}} y_{ijg}^{\frac{\eta_g - 1}{\eta_g}}\Big)^{\frac{\eta_g}{\eta_g - 1}\frac{\theta_g - 1}{\theta_g}}\right)^{\frac{\theta_g}{\theta_g - 1}} \tag{18}$$

subject to the budget constraint

$$\int_j \sum_i p_{ijg}y_{ijg}dj \leq T(= (1-\tau)Z_p) \tag{19}$$

where T is the total tax obtained by the government. Then the optimization problem can be written as:

$$\mathcal{L} = \left(\int_j (\frac{1}{J_g})^{\frac{1}{\theta_g}} \Big(\sum_i (\frac{1}{M_{jg}})^{\frac{1}{\eta_g}} y_{ijg}^{\frac{\eta_g - 1}{\eta_g}}\Big)^{\frac{\eta_g}{\eta_g - 1}\frac{\theta_g - 1}{\theta_g}} dj\right)^{\frac{\theta_g}{\theta_g - 1}} - \Lambda\left(\int_j \sum_i p_{ijg}y_{ijg}dj - (1-\tau)Z_g\right) \tag{20}$$

which leads to

$$\frac{y_{i'jg}}{y_{ijg}} = (\frac{p_{i'jg}}{p_{ijg}})^{-\eta_g} \Leftrightarrow \frac{\sum_{i'} p_{i'jg}y_{i'jg}}{y_{ijg}} = \frac{\sum_{i'} p_{i'jg}^{1-\eta_g}}{p_{ijg}^{-\eta_g}} \Leftrightarrow y_{ijg} = \frac{Z_{jg} p_{ijg}^{-\eta_g}}{p_{jg}} \tag{21}$$

where $p_{jg}y_{jg} = Z_{jg} = \sum_{i'} p_{i'jg}y_{i'jg}$ and $p_{jg} = \Big(\sum_i (\frac{1}{M_{jg}}) p_{ijg}^{1-\eta_g}\Big)^{\frac{1}{1-\eta_g}}$.

Re-write the above lagarangian equation use sector level output and price y_{jg} and p_{jg}:

$$\mathcal{L} = \left(\int_j (\frac{1}{J_g})^{\frac{1}{\theta_g}} y_{jg}^{\frac{\theta_g - 1}{\theta_g}} dj \right)^{\frac{\theta_g}{\theta_g - 1}} - \Lambda \left(\int_j p_{jg} y_{jg} dj - (1-\tau) Z_g \right) \tag{22}$$

and similar to the results above

$$\frac{y_{j'g}}{y_{jg}} = (\frac{p_{j'g}}{p_{jg}})^{-\theta_g} \Leftrightarrow \frac{\sum_{j'} p_{j'g} y_{j'g}}{y_{jg}} = \frac{\sum_{j'} p_{j'g}^{1-\theta_g}}{p_{jg}^{-\theta_g}} \Leftrightarrow y_{jg} = \frac{Z_g p_{jg}^{-\theta_g}}{P_g} \tag{23}$$

where $p_g y_g = Z_g$ and $P_g = \left(\int_j (\frac{1}{J})^{\frac{1}{\theta_g}} p_{jg}^{1-\theta_g} \right)^{\frac{1}{1-\theta_g}}$.

A.5.3 Firm's Choices: Cournot-Nash Equilibrium

From the above derivations, we obtain

$$p_{ijp} = y_{ijp}^{-\frac{1}{\eta_p}} y_{jp}^{\frac{1}{\eta_p} - \frac{1}{\theta_p}} \frac{P_p}{Y^{-\frac{1}{\theta_p}}} \tag{24}$$

same for public sector

$$p_{ijg} = y_{ijg}^{-\frac{1}{\eta_g}} y_{jg}^{\frac{1}{\eta_g} - \frac{1}{\theta_g}} \frac{P_g}{Y^{-\frac{1}{\theta_g}}} \tag{25}$$

Since we assume private and public sectors are two seperate submarkets, a firm's strategy in the public sector will not have an impact on the price of its good in the private sector(this must hold). Without financial frictions, a firm's strategy in the public sector will not directly affect its strategy in the private sector. Therefore, the two choices of output quantities y_{ijp} and y_{ijg} by a given firm will not affect each other.

Conditional on entry of both submarkets (entry costs already paid), a firm's profit maximization problem can be written as (let $X_p = \frac{P_p}{Y^{-\frac{1}{\theta_p}}}$ and $X_g = \frac{P_g}{Y^{-\frac{1}{\theta_g}}}$):

$$\pi_{ij} = \max_{y_{ijp}, y_{ijg}} y_{ijp}^{1-\frac{1}{\eta_p}} y_{jp}^{\frac{1}{\eta_p} - \frac{1}{\theta_p}} X_p - \frac{W}{z_{ij}} y_{ijp} + y_{ijg}^{-\frac{1}{\eta_g}} y_{jg}^{\frac{1}{\eta_g} - \frac{1}{\theta_g}} X_g - \frac{W}{z_{ij}} y_{ijg} \tag{26}$$

Taking the FOC wrt. both choice variables (notice that within sector total quantities y_{jp} and y_{jg} are affected by individual firms and market share $s_{ijp} = \frac{\partial y_{jp}}{\partial y_{ijp}} \frac{y_{ijp}}{y_{jp}}$ and $s_{ijg} = \frac{\partial y_{jg}}{\partial y_{ijg}} \frac{y_{ijg}}{y_{jg}}$),

$$\frac{W}{z_{ij}} = (1 - \frac{1}{\eta_p}) p_{ijp} + (\frac{1}{\eta_p} - \frac{1}{\theta_p}) p_{ijp} s_{ijp} \tag{27}$$

$$\frac{W}{z_{ij}} = (1 - \frac{1}{\eta_g}) p_{ijg} + (\frac{1}{\eta_g} - \frac{1}{\theta_g}) p_{ijg} s_{ijg} \tag{28}$$

and therefore, we obtain the markup in each submarket

$$p_{ijp} = \mu_{ijp} \frac{W}{z_{ij}} \tag{29}$$

$$\mu^*_{ijp} = \frac{[\frac{1}{\theta_p} s_{ijp} + (1 - s_{ijp}) \frac{1}{\theta_p}]^{-1}}{[\frac{1}{\theta_p} s_{ijp} + (1 - s_{ijp}) \frac{1}{\theta_p}]^{-1} - 1} \tag{30}$$

$$p_{ijg} = \mu_{ijg} \frac{W}{z_{ij}} \tag{31}$$

$$\mu^*_{ijg} = \frac{[\frac{1}{\theta_g} s_{ijg} + (1 - s_{ijg}) \frac{1}{\theta_g}]^{-1}}{[\frac{1}{\theta_g} s_{ijg} + (1 - s_{ijg}) \frac{1}{\theta_g}]^{-1} - 1} \tag{32}$$

The firm will choose to sell to HHs and the government up to the point s.t.

$$\frac{p_{ijp}}{p_{ijg}} = \frac{\mu^*_{ijp}}{\mu^*_{ijg}} \tag{33}$$

Notice that effect of entry costs of public submarket ($\mathbb{1}(\phi_g > 0)$) is similar to the effect of entry costs of private submarket ($\mathbb{1}(\phi_p > 0)$). As we assume government choose a fixed number of total contracts N_{jg} for each sector j and the probability of obtaining government contracts is a decreasing function of number of participated firms M_{jg} $\forall j$, firms' entry decisions can be written as:

$$\mathbb{1}(\phi_g > 0) = \mathbb{1}(y^*_{ijg}(\mu^*_{ijg} - 1) \frac{W}{z_{ij}} > \frac{\phi_g}{f(M_{jg})}) \tag{34}$$

Therefore, the higher the entry cost ϕ_g, the higher the entry threshold $\bar{z}_{ij}$ is for a firm to enter the public sector, the higher s_{ijg} for all the participated firms and therefore higher markup μ_{ijg} for a firm that enter the public submarket.
In this setting, apart from the general equilibrium force driven by taxation, the fact that a firm sells goods to the government does not affect its market share and thus its markup in the private submarket.

A.6 Solution

Without intercation between the public and the private submarkets within each sector, the solution is similar to the one in De Loecker, Eeckhout, and Mongey (2021).
Household Solution The household's comsumption choices $\{c_{ijp}\}_{i \in \mathcal{M}_{jp}, j \in J_p}$ are given by:

$$c(p_{ijp}; \mathbf{p}_{-ijp}, P_p, C_p) = \left(\frac{p_{ijp}}{p_{jp}(p_{ijp}; \mathbf{p}_{-ijp})} \right)^{-\eta_p} \left(\frac{p_{jp}(p_{ijp}; \mathbf{p}_{-ijp})}{P_p} \right)^{-\theta_p} C_p \tag{35}$$

where $p_{jp}(p_{ijp}; \mathbf{p}_{-ijp}) = \left(\sum_i (\frac{1}{M_{jp}}) p_{ijp}^{1-\eta_p} \right)^{\frac{1}{1-\eta_p}}$ and $P_p = \left(\int_j (\frac{1}{J})^{\frac{1}{\theta_p}} p_{jp}^{1-\theta_p} \right)^{\frac{1}{1-\theta_p}}$. The aggregate expenditure can not exceed after-tax total income $(1 - \tau)Z = WN + \Pi$.

The household's labor supply is given by: $N^s(W) = \bar{\psi}W^{\psi}$, which only depends on W. We interpret the labor supply as the number of workers with fixed working hours instead of the hours worked by each worker since we only have information about aggregate employment.

Government Solution Similar for the government's comsumption choices $\{c_{ijg}\}_{i\in\mathcal{M}_{jg},j\in J_g}$ are given by:

$$c(p_{ijg};\mathbf{p}_{-ijg},P_g,C_g) = \left(\frac{p_{ijg}}{p_{jg}(p_{ijg};\mathbf{p}_{-ijg})}\right)^{-\eta_g}\left(\frac{p_{jg}(p_{ijg};\mathbf{p}_{-ijg})}{P_g}\right)^{-\theta_g}C_g \tag{36}$$

where $p_{jg}(p_{ijg};\mathbf{p}_{-ijg}) = \left(\sum_i \left(\frac{1}{M_{jg}}\right)p_{ijg}^{1-\eta_g}\right)^{\frac{1}{1-\eta_g}}$ and $P_g = \left(\int_j (\frac{1}{J})^{\frac{1}{\theta_g}}p_{jg}^{1-\theta_g}\right)^{\frac{1}{1-\theta_g}}$. The aggregate expenditure can not exceed $T = \tau Z$.

Firm Solution We solve the firm entry and production decisions backwards. Firms take as given their belief about aggregate outcomes (W, P, Y). In the last stage, given the set of entrants M_{jp} and M_{jg} for the private and the public submarkets within sector j, respectively, firms choose their output y_{ijp} and y_{ijg} taking into account the choices by the other firms within the same sector y_{-ijp} and y_{-ijg}. The FOC condition of the firm profit maximization problem is given by:

$$p_{ijp}(y_{ijp})[1+\frac{1}{\epsilon_{ijp}}] = \frac{W}{z_{ij}} \tag{37}$$

$$p_{ijg}(y_{ijg})[1+\frac{1}{\epsilon_{ijg}}] = \frac{W}{z_{ij}} \tag{38}$$

where $\epsilon_{ijp} = \frac{p_{ijp}(y_{ijp})}{p'_{ijp}y_{ijp}}$ and $\epsilon_{ijg} = \frac{p_{ijg}(y_{ijg})}{p'_{ijg}y_{ijg}}$ is the residual demand elasticity.

Market Equilibrium The unique Cournot-Nash equilibrium allocation among M_{jp} and M_{jg} entrants satisfies:

$$p_{ijp} = \mu_{ijp}(\frac{W}{z_{ij}}), \quad \mu_{ijp} = \frac{\epsilon_{ijp}}{\epsilon_{ijp}-1} \tag{39}$$

$$p_{ijg} = \mu_{ijg}(\frac{W}{z_{ij}}), \quad \mu_{ijg} = \frac{\epsilon_{ijg}}{\epsilon_{ijg}-1} \tag{40}$$

where the residual demand elasticity ϵ and market share s are given by:

$$\epsilon_{ijp} = [s_{ijp}\frac{1}{\theta_p} + (1-s_{ijp})\frac{1}{\eta_p}]^{-1}, \quad s_{ijp} = \frac{p_{ijp}y_{ijp}}{\sum_{i'}^{M_{jp}} p_{i'jp}y_{i'jp}} = \frac{1}{M_{jp}}(\frac{p_{ijp}}{p_{jp}})^{1-\eta_p} \tag{41}$$

$$\epsilon_{ijg} = [s_{ijg}\frac{1}{\theta_g} + (1-s_{ijg})\frac{1}{\eta_g}]^{-1}, \quad s_{ijg} = \frac{p_{ijg}y_{ijg}}{\sum_{i'}^{M_{jg}} p_{i'jg}y_{i'jg}} = \frac{1}{M_{jg}}(\frac{p_{ijg}}{p_{jg}})^{1-\eta_g} \tag{42}$$

Wage Normalize the price for final private goods to 1 ($P_p = 1$), we obtain the wage through the following equations:

$$P_p = \left[\int_j \frac{1}{J} \left((\sum_i \frac{1}{M_{jp}} p_{ijp}^{1-\eta_p})^{\frac{1}{1-\eta_p}} \right)^{1-\theta_p} dj \right]^{\frac{1}{1-\theta_p}} \tag{43}$$

$$\Leftrightarrow$$

$$\frac{W}{P_p} = \left[\int_j \frac{1}{J} \left(\sum_i \frac{1}{M_{jp}} (\frac{z_{ij}}{\mu_{ijp}})^{\eta_p - 1} \right)^{\frac{1-\theta_p}{1-\eta_p}} dj \right]^{\frac{1}{\theta_p - 1}} \tag{44}$$

Wage of Final Public Good Apply the obtained wage to the price of public final good:

$$P_g = \left[\int_j \frac{1}{J} \left((\sum_i \frac{1}{M_{jg}} p_{ijg}^{1-\eta_g})^{\frac{1}{1-\eta_g}} \right)^{1-\theta_g} dj \right]^{\frac{1}{1-\theta_g}} \tag{45}$$

$$\Leftrightarrow$$

$$\frac{W}{P_g} = \left[\int_j \frac{1}{J} \left(\sum_i \frac{1}{M_{jg}} (\frac{z_{ij}}{\mu_{ijg}})^{\eta_g - 1} \right)^{\frac{1-\theta_g}{1-\eta_g}} dj \right]^{\frac{1}{\theta_g - 1}} \tag{46}$$

Labor Market Clearing

$$N_p^d = Y_p (\frac{W}{P_p})^{-\theta_p} \int_j \frac{1}{J} \left(\sum_i (\frac{z_{ij}}{\mu_{ijp}})^{\eta_p - 1} \right)^{\frac{\eta_p - \theta_p}{1-\eta_p}} \left(\sum_i \frac{1}{z_{ij}} (\frac{z_{ij}}{\mu_{ijp}})^{\eta_p} \right) dj + \int_j M_{jp} \phi_p dj \tag{47}$$

$$N_g^d = Y_g (\frac{W}{P_g})^{-\theta_g} \int_j \frac{1}{J} \left(\sum_i (\frac{z_{ij}}{\mu_{ijg}})^{\eta_g - 1} \right)^{\frac{\eta_g - \theta_g}{1-\eta_g}} \left(\sum_i \frac{1}{z_{ij}} (\frac{z_{ij}}{\mu_{ijg}})^{\eta_g} \right) dj + \int_j M_{jg} \phi_g dj \tag{48}$$

$$N^d = N_p^d + N_g^d \tag{49}$$

$$Y_g = Y_p \frac{\tau}{1-\tau} \tag{50}$$

$$N^s = \bar{\psi} \big(\frac{(1-\tau)W}{P_p} \big)^{\psi} \tag{51}$$

$$N^d = N^s \tag{52}$$

Firm Entry To close the equilibrium described above, we now discuss how the number of firms in both submarkets in each sector is determined. A firm enters any submarkets within its sector if it expect positive profit:

$$\mathbb{1}(\phi_p > 0) = \mathbb{1}(y_{ijp}^* (\mu_{ijp}^* - 1) \frac{W}{z_{ij}} \geq \phi_p) \tag{53}$$

$$\mathbb{1}(\phi_g > 0) = \mathbb{1}(y_{ijg}^* (\mu_{ijg}^* - 1) \frac{W}{z_{ij}} \geq \frac{\phi_g}{f(M_{jg})}) \tag{54}$$

Although the Cournot Nash Equilibrium described above given $\{M_{jp}\}_{j\in J_p}$ and $\{M_{jg}\}_{j\in J_g}$ is unique, there can be multiple equilibria due to the symetric homogeneous sectors. We select one equilibrium following the procedure described in De Loecker, Eeckhout, and Mongey (2021).

A.7 Solve the Equilibrium: Procedure

We follow De Loecker, Eeckhout, and Mongey (2021) to solve the model:

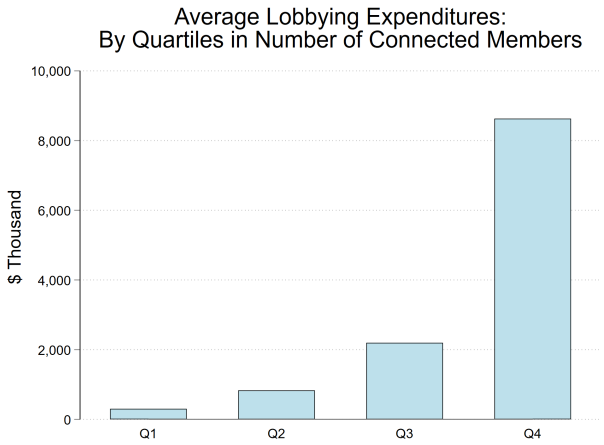
1. all firms draw the productivity;
2. starting with an equilibirum where all firms enter both submarkets in each market/sector and obtain equilibrium markups for all firms;
3. normalize P = 1 and obtain equilibrium wage W and output Y and profits for each firm (if a firm enters two submarkets, then it has two profits);
4. identify the sector and index of the firm with the lowest profit(among all possible profits including those obtained from the public and the private submarkets), if it is negative, mark it as out of market and put the markup and output of this firm to 0, then get the equilibrium markups for that sector, and get the W, Y and profits for all other firms;
5. repeat 4 until all firms have positive profits.

B Appendix B: Tables and Figures

Figure 15: How are Firms Connected to Committee Members

This figure shows average lobbying and independent expenditures for firms in each quartile of connected committee members.

Panel A: Lobbying Expenditures



Panel B: Independent Expenditures

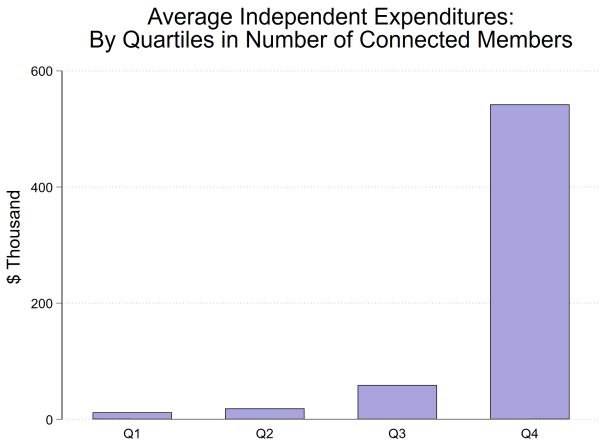


Table 7: Summary Statistics

This table reports summary statistics of the sample used in the empirical analysis. Panel (a) restricts the sample within firm-Congress observations with valid campaign contributions to congressional committee members. Panel (b) reports unconditionally all firm-Congress observations.

(a) Conditional on Valid Contributions

	N	Mean	SD	P25	Median	P75
Sales (million)	5,986	27,357.00	61,718.94	3,509.11	9,696.26	26,182.89
Cost of Goods Sold (million)	5,986	18,601.22	46,509.79	1,999.29	6,078.10	17,095.49
Variable Cost (million)	5,986	21,018.66	50,803.61	2,477.21	7,262.41	20,351.14
Variable + Fixed Cost (million)	5,986	24,823.71	57,216.91	3,241.46	8,900.20	24,051.89
Markup	5,986	1.13	0.32	0.99	1.06	1.18
Profitability	5,986	0.07	0.22	-0.01	0.06	0.16
No. of Pol Connected	5,986	53.25	66.18	9.00	28.00	73.00
No. of Democrats Connected	5,986	21.99	30.83	3.00	10.00	28.00
No. of Republicans Connected	5,986	31.26	38.03	5.00	16.00	43.00
No. of Leaving Pol Connected	5,986	1.52	4.95	0.00	0.00	0.00
No. of Returning Pol Connected	5,986	51.73	64.27	9.00	27.00	71.00
Total Donations	5,986	189664.01	354095.80	18,820.00	62,308.03	196434.19
Total Donations to Democrats	5,986	75,444.82	155823.02	5,204.64	21,526.22	73,780.66
Total Donations to Republicans	5,986	114219.19	211034.36	10,562.92	38,258.85	118838.20
Total Donations to Leaving Pol	5,986	5,021.79	22,644.85	0.00	0.00	0.00
Total Donations to Returning Pol	5,986	184642.22	344282.12	18,331.90	60,249.43	194781.73
Value of Gov. Procurement Contracts Exercised (million)	5,986	5,676.62	137954.21	0.00	0.00	0.00
Number of Gov. Procurement Contracts	5,986	50.52	568.01	0.00	0.00	0.00
Financial Subsidies Awarded (million)	5,986	11.93	163.59	0.00	0.00	0.02

(b) Unconditional on Valid Contributions

	N	Mean	SD	P25	Median	P75
Sales (million)	23,373	11,737.40	36,981.43	910.89	2,640.03	8,355.63
Cost of Goods Sold (million)	23,373	7,885.70	27,331.10	477.86	1,569.76	5,379.99
Variable Cost (million)	23,373	8,818.52	29,846.01	542.29	1,810.84	6,153.65
Variable + Fixed Cost (million)	23,373	10,587.60	33,992.65	809.17	2,407.83	7,653.13
Markup	23,373	1.15	0.82	1.01	1.08	1.19
Profitability	23,373	-0.39	31.11	0.01	0.07	0.16
No. of Pol Connected	23,373	13.64	40.76	0.00	0.00	1.00
No. of Democrats Connected	23,373	5.63	18.32	0.00	0.00	0.00
No. of Republicans Connected	23,373	8.01	23.59	0.00	0.00	0.00
No. of Leaving Pol Connected	23,373	0.39	2.59	0.00	0.00	0.00
No. of Returning Pol Connected	23,373	13.25	39.59	0.00	0.00	1.00
Total Donations	23,373	48,574.37	197386.37	0.00	0.00	1,317.74
Total Donations to Democrats	23,373	19,321.98	85,452.77	0.00	0.00	0.00
Total Donations to Republicans	23,373	29,252.39	117856.03	0.00	0.00	0.00
Total Donations to Leaving Pol	23,373	1,286.12	11,666.94	0.00	0.00	0.00
Total Donations to Returning Pol	23,373	47,288.25	191958.85	0.00	0.00	1,288.14
Value of Gov. Procurement Contracts Exercised (million)	23,373	2,192.63	78,929.33	0.00	0.00	0.00
Number of Gov. Procurement Contracts	23,373	28.74	723.08	0.00	0.00	0.00
Financial Subsidies Awarded (million)	23,373	4.30	95.26	0.00	0.00	0.00

Table 8: Variable Definitions

This table provides definitions of the variables constructed, as well as their sources.

Variable	Definition	Main Data Source
Firm PAC Contributions	Campaign contributions from Political Action Committee (PAC) sponsored by the firm to a committee member in a Congress	OpenSecrets
Firm PAC Historical Contributions	Total campaign contributions from PAC sponsored by the firm to a committee member to a member up to current Congress	OpenSecrets
Firm PAC Contributions to Incumbent Members	Total campaign contributions from PAC sponsored by the firm to all current incumbent members in Congress	OpenSecrets
Firm PAC Contributions to Historically Incumbent Members	Total campaign contributions from PAC sponsored by the firm to all historically incumbent members up to current Congress	OpenSecrets
Exercised Value of Contracts	Firm's total value of active procurement contracts in the Congress divided by number of contracting years	usaspending.gov
Financial Subsidies	Total financial subsidies awarded to the firm by federal, state or local government	Good Jobs First
Effective Tax Rates	(income taxes total - deferred taxes)/(pretax income - equity in earning + special items + interest expense)	Compustat
Number of Politicians Connected	Total number of committee members connected to the firm via campaign contributions in a Congress	OpenSecrets
Lobbying Expenditures	Total lobbying expenditures associated with firm PAC	OpenSecrets
Independent Expenditures	Total independent expenditures associated with firm PAC	OpenSecrets
Profitability	(Sales - Cost of Goods Sold - Capital Cost - Selling, General, and Administrative Expense)/Sales	Compustat
Markup	Sales/(Cost of Goods Sold + Capital Cost + Selling, General, and Administrative Expense)	Compustat

Table 9: Firms ever Donating to Exiled Members

This table reports estimated coefficients and standard errors of the robustness check, in which we restrict the sample of firms within those ever donating to exiled committee members. From column (1) to (4) the dependent variables are log of sales, log of total costs (variable + fixed), firm markups (total sales/total costs) and profitability (1 - total costs/total sales), respectively. In all the regressions we restrict politicians with average seniority in all assigned committees smaller or equal to 3 (6 years). Firm level lagged controls include log of total sales, log of total costs and log of total number of political connections. We also include firm and Congress fixed-effects. Standard errors are clustered at firm level. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)	Log (Total Cost)	Markup	Profitability
Loss Share	0.001	0.084	-0.064***	-0.046*
	(0.008)	(0.055)	(0.024)	(0.025)
Log (Total Number of Political Connections)	0.002	0.032***	-0.005	-0.006
	(0.001)	(0.011)	(0.005)	(0.004)
Log (Sales)	0.529***	3.332***	1.297***	0.401**
	(0.045)	(0.361)	(0.284)	(0.166)
Log (Cost of Goods Sold)	0.012***	0.282***	-0.155***	-0.053***
	(0.004)	(0.033)	(0.031)	(0.020)
R-squared	0.961	0.968	0.840	0.641
No. obs	4,201	4,201	4,201	4,201
Firm FE	Yes	Yes	Yes	Yes
Congress FE	Yes	Yes	Yes	Yes

Table 10: Controlling for Connection with Party Leaders

This table reports estimated coefficients and standard errors of the robustness check, in which we control for firm political connection with party leaders. From column (1) to (4) the dependent variables are log of sales, log of total costs (variable + fixed), firm markups (total sales/total costs) and profitability (1 - total costs/total sales), respectively. In all the regressions we restrict politicians with average seniority in all assigned committees smaller or equal to 3 (6 years). Firm level lagged controls include log of total sales, log of total costs and log of total number of political connections. We also include firm and Congress fixed-effects. Standard errors are clustered at firm level. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	Log (Sales)	Log (Total Cost)	Markup	Profitability
Loss Share - Lag	-0.004	0.025	-0.058***	-0.046**
	(0.007)	(0.051)	(0.022)	(0.024)
Log (Total Number of Political Connections) - Lag	0.002**	0.032***	-0.002	-0.004
	(0.001)	(0.009)	(0.005)	(0.004)
Log (Sales) - Lag	0.510***	3.077***	1.255***	0.456***
	(0.038)	(0.298)	(0.230)	(0.164)
Log (Cost of Goods Sold) - Lag	0.011***	0.282***	-0.156***	-0.061***
	(0.003)	(0.029)	(0.026)	(0.019)
Connection with Party Leader (D)	0.002	0.013	0.011	0.016**
	(0.002)	(0.022)	(0.011)	(0.008)
Connection with Party Leader (R)	0.001	0.010	0.007	0.002
	(0.002)	(0.014)	(0.006)	(0.007)
R-squared	0.963	0.970	0.832	0.634
No. obs	5,142	5,142	5,142	5,142
Firm FE	Yes	Yes	Yes	Yes
Congress FE	Yes	Yes	Yes	Yes

Table 11: Predicted and Unpredicted Loss Share

This table reports estimated coefficients and standard errors of the robustness check, in which we decompose loss share that can and cannot be predicted by firm characteristics. In the first step, we compute expected loss share of politicians based on possible explanatory variables including total number of political connections, firm total campaign contributions, firm campaign contributions to Democratic Party, total sales and total costs. All explanatory variables are in logs. Panel A reports the regression coefficients and standard errors of the first step. We use predicted and residuals to denote expected and unexpected loss share, respectively. In Panel B, The main independent variable is the lagged loss share of political connections resulted from committee exile. From column (1) to (4) the dependent variables are log of sales, log of total costs (variable + fixed), firm markups (total sales/total costs) and profitability (1 - total costs/total sales), respectively. In all the regressions we restrict politicians with average seniority in all assigned committees smaller or equal to 3 (6 years). Firm level lagged controls include log of total sales, log of total costs and log of total number of political connections. We also include firm and Congress fixed-effects. Standard errors are clustered at firm level. All monetary variables are deflated by annual CPI (2015 = 100). *, ** and *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

(a) Loss Share Predicted by Firm Characteristics

	Loss Share
Log (Total Number of Political Connections)	-0.002
	(0.007)
Log (Firm Total Campaign Contributions)	-0.021
	(0.014)
Log (Firm Campaign Contributions to Democrats)	0.018
	(0.013)
Log (Sales)	-0.017
	(0.065)
Log (Cost of Goods Sold)	0.002
	(0.007)
R-squared	0.432
No. obs	1,394
Congress FE	Yes

(b) Predicted vs. Unpredicted Loss Share

	Log (Sales)	Log (Total Cost)	Markup	Profitability
Unexpected Loss Share - Lag	-0.019*	-0.029	-0.104**	-0.113*
	(0.010)	(0.081)	(0.052)	(0.060)
Expected Loss Share - Lag	11.419***	174.859***	-47.095*	-25.434*
	(2.902)	(26.522)	(24.497)	(15.077)
Log (Total Number of Political Connections)	0.023***	0.349***	-0.083*	-0.043
	(0.008)	(0.068)	(0.050)	(0.032)
Log (Firm Total Campaign Contributions)	0.244***	3.779***	-1.046**	-0.582*
	(0.063)	(0.574)	(0.521)	(0.326)
Log (Firm Campaign Contributions to Democrats)	-0.203***	-3.176***	0.888**	0.487*
	(0.053)	(0.483)	(0.439)	(0.271)
Log (Sales)	0.568***	5.199***	-0.190	-0.155
	(0.038)	(0.322)	(0.130)	(0.116)
Log (Cost of Goods Sold)	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)
R-squared	0.978	0.981	0.897	0.731
No. obs	910	910	910	910
Firm FE	Yes	Yes	Yes	Yes
Congress FE	Yes	Yes	Yes	Yes